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A More Cheerful Feeling

Belief Growing That the Worst Is Over

Pig Iron Prices Slightly Lower, but More Business

The steel market presents a more cheerful aspect. The feeling in Pittsburgh is that the worst is over and that from this time improvement is to be expected. The recent reduction in prices appears to have made good. The volume of new business of steel manufacturers has quite considerably increased in the past ten days and the bookings of the past week were larger than those of the previous week. Specifications against contracts are more liberal in all lines except those which are influenced to some extent by the approach of the inventory period about July 1. Reports received show that a number of mills in the Pittsburgh and Youngstown districts are working fuller in all departments.

It may be said with regard to the position of the Republic Iron & Steel Company in the market that in taking the initiative in reducing steel bar prices its action was not hasty but was taken after protracted efforts had been made to prevail upon other bar manufacturers to make the revision of prices which appeared necessary. It was done after careful deliberation, having been recommended by those responsible for the business management of the company, indorsed by the unanimous vote of the board of directors. It was further done at a time when jobbing interests and consuming manufacturers had a minimum of stock on hand and would lose comparatively little in the shrinkage in value of such stocks. It is gratifying that this imperative readjustment in the price of steel bars has not impaired the market on other steel products. It must be admitted that the company continued to co-operate with other bar manufacturers for a considerable period after the fact was made manifest that its trade, which is so heavily in steel bars, was suffering from the much lower prices made by iron bar and hard steel bar manufacturers. As it is by no means conducting a so-called price war, its action may after all tend to strengthen the cooperative movement in the steel trade by showing the necessity that this movement should have more flexibility in meeting changed trade conditions.

Contributing to the cheerfulness are some developments outside of mere market circles. The investigation of the United States Steel Corporation at Washington, instead of uncovering anything of disadvantage to that great interest, has so far been distinctly disappointing to the investigators, while the decision of the grand jury of the United States Court at Pittsburgh that nothing has been found in the recent coal lands purchase on which to base an indictment is also much more agreeable than if a criminal prosecution had been started.

The pig iron trade is better, although prices are a

trifle lower, particularly on Southern iron. Quite important transactions in basic pig iron have taken place. In addition to 25,000 tons purchased by an eastern Pennsylvania steel company for fourth quarter delivery, which was reported last week, a southern Ohio steel company has purchased 4000 tons and a New Jersey consumer 6000 tons, while inquiries are out for other round lots. The aggregate of transactions in foundry pig iron is believed to have been somewhat larger than for the previous two or three weeks. An indication of the character of current consumption is the fact that Alabama stocks of pig iron on June 1 showed but a slight increase on those of May 1 and hence the May shipments practically equaled the output of the Alabama furnaces.

The rail situation shows decided improvement. The Kansas City Southern has bought 14,000 tons; the Pere Marquette, 5000 tons; the Missouri Pacific, 28,000 tons, in addition to the purchase reported last week; the Cuba Central, 8000 tons; the National Railways of Hayti, 8000 tons. Definite inquiries are in hand for quantities ranging from 10,000 to 50,000 tons from large railroad systems while officers of other lines report that the question of purchasing heavy quantities is under consideration by their respective boards.

Large inquiries are in the market for wrought pipe for gas lines, one of which calls for 300 miles of 16 to 20 in.

All non-ferrous metals but pig tin have advanced in the past week. Electrolytic copper is now selling at 12½c., New York, and Lake at 12¾c. Pig tin is lower in New York, although higher in London.

Judge Gary as a Witness

E. H. Gary, chairman of the United States Steel Corporation, has proved the most interesting witness appearing before a Congressional committee in a very long time. His manner and his methods have been rather surprising to the committee of the House of Representatives which is now investigating the United States Steel Corporation and of which Representative Stanley of Kentucky is chairman. Judge Gary has at all times been frank in answering the questions put to him; and, more than this, has frequently expanded his answers so as to give the members of the committee and the country as complete particulars regarding the corporation and its affairs as he has in his possession. This is in perfect harmony with the publicity policy of the Steel Corporation for which Judge Gary has been in a large measure responsible. From the day of its organization it has concealed nothing which it is for the interest of the shareholders or the public at large to know.

The witness has gone beyond the lines of the mere investigation into his corporation. He cuts out a great deal of work for the government and for those who feel that its energies may be directed more broadly in looking after the interests of the people. He has given men of affairs a great many matters to think about, and has gone further than a man in his position might be expected to do in inviting official oversight. He has stated that he believes in the government control of large corporations and in the close scrutiny of their affairs by governmental commissions. He has admitted that abuses exist in the conduct of large corporations and that it is eminently desirable that some supervising body should exist to which they would be held directly responsible for improper methods. He advocates a federal licensing plan to conduct an interstate business, the license to be revoked in the event of the corporation violating the law, but with the right to appeal to the courts. He expresses himself strongly as to the danger of one man securing such financial and industrial power as J. P. Morgan, stating his belief that a man of Mr. Morgan's wealth and business capacity could do a great deal of harm as well as good, and it is for this reason, among others, that the government should exercise more control over banking institutions as well as great corporations. Judge Gary does not evade the responsibility of bringing about a closer co-operation in the maintenance of steel prices, but boldly justifies what has been done in that direction. He goes further than this in stating his belief that the government should control prices. He readily indorsed a suggestion that a joint committee of Congress be created to obtain the views of both capital and labor in regard to the strengthening and elaboration of the Sherman anti-trust law.

While many will heartily agree with Judge Gary in the attitude he takes on a number of the important subjects touched upon in his testimony, the steel trade generally is not likely to support his suggestion that the government should in any way attempt to regulate prices. A large corporation like the United States Steel Corporation is, of course, at this time in a peculiar position. If it co-operates with other manufacturers in the same line, and by mere interchange of opinions, but without actual agreement, maintains its prices on the same level as theirs, it is, nevertheless, in danger of prosecution for criminal conspiracy in violation of the Sherman anti-trust act. On the other hand, if it holds itself aloof from all conferences with them, makes it prices more attractive than those of its competitors, and by so doing injures their business or compels them to close, it is then likely to be charged with endeavoring to establish a monopoly and may suffer the fate of the American Tobacco Company. If the corporation would placate a very important part of the public it must compete actively and vigorously, while if it would avoid prosecution by the government it must compete so gently that it will not injure any one of its competitors by capturing business from it. In any event, it will be found almost impossible to please that section of the public which would "bust the trusts."

The question of establishing prices, however, is regarded by the trade as having no such intimate connection with the regulation of large corporations as to call for government interference as a related subject. It is admitted that the government should suppress combinations to hold up or advance prices, but few are prepared to believe that the prices of their products could be satisfactorily fixed by any kind of government commission.

It is to be hoped that out of this investigation will come such an education of the general mind with regard to large corporations that the situation may be made much clearer with respect to their rights to exist. Public sentiment is capable of being directed along sensible lines, notwithstanding the impression that demagogues have succeeded in securing the greatest following. This has been shown at repeated times in our history when the danger existed that our lawmakers would be driven into wild legislation in accordance with what seemed to be the popular will. Out of the agitation and out of the conflict came a saner, clearer perception of what should be done, and

a majority of the people ranged themselves on what afterward proved to be the right side. This may be the outcome of the present investigation, prompted though it be by hostility to the leading industrial corporation of the country and of the world.

A Thousand an Acre for Connellsville Coal

The United States Steel Corporation's purchase of the Connellsville coke properties of the Pittsburgh Coal Company was at a price of approximately $1,000 an acre. The properties were held by the coal company through its subsidiary, the Colonial Coke Company. The company's last report showed 7077 acres unmined January 1, 1911, so that a trifle more than 7000 acres remain at this date, which, with all the improvements, is bought for $1,450 an acre, making a total price, at 7000 acres, of $10,150,000. The value of the improvements is variously estimated, some estimates running up to $3,000,000, which would leave approximately $7,000,000, or about $1,000 an acre, for the coal seam itself.

The establishment, or rather the re-establishment, of the thousand-an-acre price for Connellsville coal comes as a shock to many Connellsville operators, and perhaps to others who may have been impressed with their arguments as to the extremely great value of this fuel. The shock, however, is not as great as it would have been had there not been the preparation for it furnished by Connellsville furnace coke having sold at from $1.50 to $1.75 per net ton at oven during the past twelvemonth. For a series of years selling prices had been pushed upward until straight sales were made at more than $2,000 an acre, and when an effort was made, in the late spring and early summer of 1909, to buy up the independent operations in the region for the purpose of forming a consolidation the prices asked by individual operators ran up to $3,000 and $4,000 an acre, with improvements, indicating that many operators considered the seam worth upward of $2,500 an acre.

Throughout this movement the H. C. Frick Coke Company, the coke subsidiary of the United States Steel Corporation, maintained a position that Connellsville coal could not be worth more than about $1,000 an acre. Frequently its policy was criticised, its refusal to take hold of various "bargains" at considerably more than the figure being regarded as a mistake. The recent transaction vindicates its position.

At long range, the thousand-an-acre price does not appear as such a low one. The Hodge legal attack on the Steel Corporation's proposal to issue bonds and retire a portion of its preferred stock in 1902 forced the corporation to defend its capitalization. At that time the idea that a large part of the capitalization was "water" was very much more prevalent than now, and the finding of $1,400,000,000 of assets, as was done in the answer to the Hodge bill of complaint, was regarded in some quarters as quite a stroke. It is interesting now to turn back and find that in the schedule of assets there appeared, after the famous $700,000,000 set down as the value of the ore properties, the item: "Coal and coke properties (87,589 acres) $100,000,000." At that time the corporation owned about 60,000 acres of Connellsville coal, the remaining 27,000 or 28,000 acres being chiefly steam coal. All were more or less improved, and with over 16,000 ovens in the Connellsville region it is quite reasonable to infer that the Connellsville coal contributed less, rather than more, than $1,000 an acre to the total of $100,000,000 given as the value of all the coal and coke properties, including the improvements.

How absurd were the extreme estimates of value of Connellsville coal may be illustrated by some simple computations. It is usually taken that an acre of the seam will produce 7000 tons of coke, although experience shows a little better than this. As the Colonial property has just been sold, its showing may be mentioned. In 1909 it exhausted 67 acres and produced 484,903 tons of coke, which is at the rate of 7250 tons per acre; in 1910 it exhausted 81 acres and produced 635,338 tons, at the rate of 7850 tons per acre; the average of the two years was thus better than 7500 tons. While the Connellsville region is supposed to be clearly marked, it is a fact that the total area regarded as unmined Connellsville does not diminish from year to year directly as the annual exhaustion. It may be taken that there is about 90,000 acres fully entitled to be considered Connellsville. The region has never produced 21,000,000 tons of coke in a year, and there is no distinct prospect that it ever will; but even this would exhaust no more than 3000 acres at the outside, requiring 30 years or more of full operation to exhaust the region. Allowing for bad years, the life can easily be taken at 40 years according to present prospects. Of each 40 acres one acre would be exhausted each year, producing 7000 tons of coke, which would have to carry interest and sinking fund on the entire 40 acres. At five per cent., which is a very low rate considering the vicissitudes of such a business, the annual sinking fund is about $8 per 1000; interest being $50, this makes a total of $58 per 1000. At $3,000 per acre there would be $120,000, requiring $6,960 a year, to be borne by a production of 7000 tons, which is almost precisely $1 per ton. That ton of coke would also have to carry interest and sinking fund on the development cost and all other expenses. Obviously, then, either the $3,000 an acre, or the estimate of 40 years' life for the region, or both, must be absurd.

As a matter of fact, many of the Connellsville operations have been on a basis of making profits through fortuitous circumstances, rather than converting into cash their respective portions of the total value of the Connellsville seam. They have been able to operate on a basis of exhaustion in from 15 to 25 years—in a few cases less than 15 years of full output—simply because other acres were aligned to be exhausted much more slowly. Particularly, in this connection, there have been the reserves of the Steel Corporation. Roundly speaking, the corporation has in the past eight years been mining Connellsville coal at the average rate of little more than 1000 acres a year, although owning an average of 60,000 acres, thus proceeding on the basis of having its reserves last more than 50 years. That operated to shorten the apparent life of the outside acreage, but in the long run such a basis is not a safe one. Independent operations which are based upon a valuation of much more than $1,000 an acre for the coal are not in a very comfortable position. The trade custom, though how established it might be hard to ascertain, is to count on two acres per oven in establishing a basis for an operation, the prospective life being then taken at from 20 to 25 years. The defense is that a modern oven produces about 14 tons a week, which, at 50 weeks per year, practically full operation, means 700 tons per year, or 14,000 tons, the assumed product

of two acres, in 20 years. Then five years are added for a margin to cover "bad years" and the operation is taken to rest on a fairly reasonable foundation. At $1,000 an acre the interest and exhaustion charge for a 20-year life, at 5 per cent., is $50 for interest and about $30 for sinking fund, $80, against 350 tons of coke per year, or 23 cents per ton. At 25 years' life there is $50 interest and about $20 sinking fund, $70, against 280 tons, or 25 cents per ton. At this valuation per acre, Connellsville coke can with comfort to the producer sell at considerably less than $2 per ton. The bare cost of production is nearer $1 than $1.25, and it is probably not unfair to allow the same amount for interest and depreciation on the plant as was allowed on the coal, so that the prices of the past twelvemonth, $1.50 to $1.75 per ton, appear to be in close relationship with a valuation of $1,000 an acre and operations to exhaust in from 20 to 25 years.

The United States Steel Corporation's unmined acreage of Connellsville coal has been given as follows in its annual reports as of December 31 each year, all the acreage being owned, except for 1000 to 1500 acres reported leased in the past three years:

Years.	Acres.	Years.	Acres.
1902	59,740	1907	62,253
1903	61,583	1908	59,970
1904	62,984	1909	58,358
1905	63,694	1910	56,845
1906	62,517		

The average exhaustion has been, as noted, a trifle over 1000 acres a year. The unmined acreage rose until the end of 1905, indicating that the corporation was buying additional properties. During the next five years it decreased a trifle less than 7000 acres, indicating that the corporation was not acquiring additional properties. The period of excessive valuations had been reached and the corporation left the coal land market alone. With the market's return to an older idea of values, the corporation has made a purchase equivalent to half a dozen years of its production, which does not indicate any very strenuous striving after monopoly. At the present rate of exhaustion, the Steel Corporation can see half a century of life to its holdings, the outside holdings promising to last about half as long, according to the present rate. The figures merely indicate that exhaustion is remote in either case, for developments as to the character of coke needed for blast furnaces, and the character of coal which can be used to make the coke, come very rapidly.

Correspondence

The Ethics of Selling Machinery

To the Editor: Your article in *The Iron Age* of June 1, on "Beating Down Machinery Prices," is interesting because you state that "such buying methods are clearly reprehensible . . . and against general business ethics." In effect you state that the process consists in playing one bidder against another until from each bidder is gotten a price which is declared to be his lowest, and, as no salesman has convinced the buyer that he should buy one machine in preference to another, he puts the matter up to the salesmen, stating that, all other things being equal, price will govern. In each case the salesmen secured a lower price from the home office and the order was placed at a ridiculously low price.

It would interest me to know why you criticise such buying methods instead of such selling methods. The buyer has simply bought what best suited his needs, as he believed, and bought at the lowest price. The sellers, on the other hand, have considered that conditions warranted it, and cut the price to whatever degree they thought they needed the order. The buyer, it would seem to me, would rather have the lowest price first and thereby avoid the necessity for any dickering, as no buyer can expect to get the best of the bargain every time.

The very keen competition and the desire of machinery manufacturers to keep their organization together in these dull times justify the buyer's belief that he can buy at less than list prices. To be sure, this occurrence may have brought about spirited price-cutting among the sellers of a certain class of machinery and upset their confidence in each other, but why is the buyer blamed? Your article states that the machinery maker who always quotes the lowest figure consistent with his business policy and sticks to it is not bothered by "sweating tactics." Just so. But in the case you mention they did not quote the lowest price first, and if any one acted reprehensibly it was the sellers, and not the buyer.

A little discussion on business ethics might promote better distinctions between a deal and the policy which governs a deal. S. T. Toby.

New York, June 5, 1911.

The Steel Corporation's Policy of Publicity

The New York Commercial of June 6 thus expresses the general appreciation of the policy of publicity shown by Chairman E. H. Gary, of the United States Steel Corporation:

By reason of the fact that conferences between the competing iron and steel interests of the United States like that of the Metropolitan Club luncheon in this city last week are very largely confidential and private affairs and thus permit their details with propriety to be withheld from publication, it must be conceded that Judge Gary, chairman of the executive board of the United States Steel Corporation, has rendered a distinct public service in releasing to the newspapers his address to the assembled steel "magnates" on that occasion. The incident is all-important as emphasizing the corporation's established policy of taking the public into its confidence and that of the steel trade in general within reasonable bounds; and it is illuminating at the moment as disclosing the attitude of the trade toward the recent Oil and Tobacco decisions by the United States Supreme Court.

The chairman advises a strict compliance with the terms of those rulings—suggests that the iron and steel trade take a leading part in doing its best to hold up the hands of the federal government in order to bring about an improvement in the industrial conditions of the country. "I would not," he says further, "under any circumstances, make any agreement, expressed or implied, direct or indirect, to maintain certain prices, to keep away from customers, to divide territory, to restrict output or to make any agreement of any sort or description with you or any of you, because, as I understand the law, I have no right to do it." Here is a plain, unmistakable, unequivocal notice to it, to the country at large and to the government that the Steel Corporation may be depended upon to obey the law as it stands, so long as it is the law—that it will make no effort to "get around" the law. And obviously the competing interests in the conference all acquiesced in this clearly defined policy of the leading company in the trade. The fact ought to have a distinctively steadying and reassuring effect on the business of the country.

The Youngstown Sheet & Tube Company Will Build Open-Hearth Steel Plant.—The Youngstown Sheet & Tube Company, Youngstown, Ohio, definitely decided last week to proceed with the building of an open-hearth steel plant to contain six 75-ton furnaces with blooming mill to roll up to 36-in. slabs. The plant is to be connected with the present sheet bar and billet mills, so that the two blooming mills will be interchangeable as far as the Bessemer and open-hearth steel product is concerned. The company intends to build some additional finishing capacity to use up a large percentage of the steel made in the new plant, but just what will be made will not be decided for several months. This company has operated for some years a large Bessemer steel plant, the second largest in the country, and makes iron and steel pipe, iron and steel sheets, wire rods, wire nails and wire. Contracts for the building of the open-hearth steel plant will be placed in a very short time.

Personal

Henry C. Adams, former chief statistician of the Interstate Commerce Commission, has been appointed chief of the bureau of statistical research of the New York Central Railroad, a new department organized for the purpose of testing the Brandeis theories of economies in railroad management.

A. Hamilton Church, consulting industrial engineer, author of "The Proper Distribution of the Expense Burden," announces that he has commenced practice for himself, and is forming a strong organization to handle all departments of industrial betterment, intensified production, efficiency work, routing methods and costs. He reports several contracts already in hand for the installation of cost systems based on his method of "production factors." His address is P. O. Box 1362, Boston, Mass.

Joseph V. Woodworth, formerly superintendent of the Harwood Mfg. Company, Brooklyn, N. Y., and author of many well-known books on machine shop practice, is now with the Taft-Pierce Mfg. Company, Woonsocket, R. I., as consulting engineer and expert in sheet metal formation and punch and die practice.

E. H. Hargrave, president of the Cincinnati Tool Company, Norwood, Ohio, has returned from an extended business trip through the Hawaiian Islands, New Zealand, Australia, Japan and the Philippine Islands.

William B. Melish, president of the William B. Melish Company, Cincinnati, has returned from a business and pleasure trip to Europe.

E. G. Schmeisser, electrical engineer, a graduate of the Massachusetts Institute of Technology, formerly assistant engineer in the department of electric traction of the Pennsylvania Railroad, has been elected second vice-president of the Wiener Machinery Company, 30 Church street, New York. The capital of the Wiener Machinery Company has been increased recently to $25,000, and branch offices have been opened in Pittsburgh and Boston.

C. M. Neeld, for 11 years connected with the McClintic-Marshall Construction Company, Pittsburgh, has resigned and has organized the C. M. Neeld Construction Company with offices at 1418 Oliver Building, Pittsburgh, to do a general contracting and engineering business in the designing and erection of steel frame or concrete buildings, bridges, etc.

Charles E. Pope, president of the Pope Tin Plate Company, Pittsburgh, Pa., has sailed for Europe, to be gone about two months.

J. A. Campbell, president of the Youngstown Sheet & Tube Company, Youngstown, Ohio, will sail for Europe June 17, expecting to return about September 1.

Joseph G. Butler, Jr., president of the Bessemer Pig Iron Association, Youngstown, Ohio, will sail for Europe June 17. He will return about September 1.

A. H. Baldwin, superintendent of the Driggs-Seabury Ordnance Corporation, Sharon, Pa., has resigned, effective June 15, and his assistant, C. E. Wilder, has also resigned.

Frederick Baldt, Sr., long and favorably known in the steel casting business, has become identified with the Brylgon Steel Casting Company, New Castle, Del., as its manager.

The American Institute of Mining Engineers, at its recent meeting at Glen Summit, Wilkes-Barre, Pa., elected to honorary membership Prof. Robert H. Richards, Boston, Mass., and Dr. Rossiter W. Raymond, New York.

T. E. Ford, for the past year district sales manager in Chicago territory for the Ford Chain Block Company, Philadelphia, has opened an office in Room 745, First National Bank Building.

F. D. Reed, assistant to the vice-president of the Chicago, Rock Island & Pacific Railroad Company, has been appointed purchasing agent of that company, with office in Chicago, to succeed J. M. McCarthy, who recently resigned. W. R. Owen has been appointed assistant purchasing agent.

Willard C. Brinton, formerly with the Westinghouse Electric & Mfg. Company, East Pittsburgh, Pa., is now assistant vice-president of the United States Motor Company, Sixty-first street and Broadway, New York City.

William J. Reilly, who has been manager of the Cleveland office of the Babcock & Wilcox Company, has been transferred to Denver, where he will represent the company in a similar capacity. He is succeeded in the Cleveland office by T. P. MacFarland, who has been connected with the Pittsburgh office of the same company.

James Duane, Jr., formerly superintendent of Saxton Furnaces, Saxton, Pa., has been appointed superintendent of blast furnaces for the Pittsburgh Crucible Steel Company, situated at Midland, Pa., effective June 1.

H. R. Stacks, who until recently was superintendent of foundries of the Nelson Valve Company, Wyndmoor, Pa., has severed that connection and will engage in contracting and engineering, particularly in connection with concentration plants and will market as a specialty the Lehigh stone crusher. An office for the transaction of business has been opened at 725 Reed Building, Philadelphia, Pa.

I. F. Hepler, formerly of the Republic Iron & Steel Company, has associated himself with Burrows, Sloan & Co., 1520 Real Estate Trust Building, Philadelphia, Pa., in their construction department, as chief engineer.

Obituary

JAMES LAPPAN, president of the James Lappan Mfg. Company, Pittsburgh, died in St. Francis Hospital in that city June 6 after a short illness, aged 77 years. He was born in Ireland and went to Pittsburgh in 1854, where he entered the employ of the D. F. Agnew Boiler Mfg. Company. Engaging in business for himself under the name of James Lappan & Co., his operations grew until the firm was incorporated as the James Lappan Mfg. Company, manufacturing boilers and other heavy plate work extensively. He leaves one son and two daughters.

LAWRENCE DILWORTH, Pittsburgh, died suddenly of heart trouble June 13, aged 57 years. He was a member of Dilworth, Porter & Co., Ltd., spike manufacturers, and of the wholesale grocery firm of Dilworth Bros. He was born in Pittsburgh and received his education at Lafayette College.

Forging Press Catalogue.—The United Engineering & Foundry Company, Pittsburgh, Pa., has issued an attractive catalogue describing a line of high speed forging presses of the steam-hydraulic intensifier type which it builds under the Davy patents. These presses are intended for all classes of forging, shearing or pressing work and range in capacity from 100 to 12,000 lbs. The construction of the presses is described and this is followed by a set of specifications for a press of the four-column type. After this are a number of full-page illustrations showing the different types of presses in operation and also some specimens of the actual work produced by them. Two of the illustrations which are especially interesting show one of the company's single frame presses in operation in America and on the facing page is exactly the same size press set up in India that illustrates the ease with which forgings can be made without employing skilled labor.

No. 2 Swede furnace, of the Heckscher furnace department of the Alan Wood Iron & Steel Company, Swedeland, Pa., will be blown out June 18. No. 1 furnace was blown in late in May. General repairs, which will require about two months' time, will be made.

Arthur G. McKee, engineer, Rockefeller Building, Cleveland, has been given a contract for the construction of three hot blast stoves at the Midland, Ont., plant of the Canada Iron Corporation. The stoves will be of the Nelson type, 20 x 90-ft., two-pass, side combustion.

Single pieces of coke 52 in. in length were exhibited at the recent foundrymen's convention in Pittsburgh by the Graceton Coke Company, Graceton, Pa. These were, of course, calculated to show the strong structure of the coke, tending to prevent its breaking up and giving rise to dust and waste material in shipment.

Governor Foss, of Massachusetts, has signed a bill which shortens the weekly working hours of women and minors from 56 to 54 hours. He has also signed a bill making eight hours a day's work for all public employees.

The Iron and Metal Markets

A Comparison of Prices

Advances Over the Previous Week in Heavy Type, Declines in Italics.

At date, one week, one month and one year previous.

	June 14 1911.	June 7 1911.	May 10 1911.	June 15 1910.
PIG IRON, Per Gross Ton:				
Foundry No. 2, standard, Philadelphia	$15.00	$15.00	$15.50	$16.75
Foundry No. 2, Valley furnace	*13.50*	13.75	13.75	14.75
Foundry No. 2, Southern, Cincinnati	*13.50*	13.75	14.25	15.00
Foundry No. 2, Birmingham, Ala.	*10.25*	10.50	11.00	11.75
Foundry No. 2, at furnace, Chicago*	15.00	15.00	15.00	16.75
Basic, delivered, eastern Pa.	14.50	14.50	15.00	16.25
Basic, Valley furnace	13.10	13.10	13.50	14.75
Bessemer, Pittsburgh	15.90	15.90	15.90	16.65
Gray forge, Pittsburgh	*13.90*	14.15	14.40	15.15
Lake Superior charcoal, Chicago	17.00	17.00	17.50	18.50
COKE, CONNELLSVILLE, Per Net Ton, at oven:				
Furnace coke, prompt shipment	*1.40*	1.45	1.55	1.55
Furnace coke, future delivery	*1.60*	1.70	1.75	1.75
Foundry coke, prompt shipment	1.75	1.75	1.85	2.15
Foundry coke, future delivery	**2.15**	2.00	2.10	2.25
BILLETS, &c., Per Gross Ton:				
Bessemer billets, Pittsburgh	21.00	21.00	23.00	25.50
Forging billets, Pittsburgh	26.00	26.00	28.00	31.00
Open hearth billets, Philadelphia	23.40	23.40	25.40	28.50
Wire rods, Pittsburgh	29.00	29.00	29.00	31.00
OLD MATERIAL, Per Gross Ton:				
Iron rails, Chicago	14.00	14.00	14.00	17.00
Iron rails, Philadelphia	*16.50*	16.75	16.75	20.00
Car wheels, Chicago	12.50	12.50	12.75	15.50
Car wheels, Philadelphia	13.00	13.00	13.00	15.00
Heavy steel scrap, Pittsburgh	*12.75*	13.00	12.50	15.25
Heavy steel scrap, Chicago	10.25	10.25	10.25	13.00
Heavy steel scrap, Philadelphia	13.00	13.00	13.00	14.50
FINISHED IRON AND STEEL, Per Pound:	Cents.	Cents.	Cents.	Cents.
Bessemer rails, heavy, at mill	1.25	1.25	1.25	1.25
Refined iron bars, Philadelphia	1.27½	1.27½	1.32½	1.47½
Common iron bars, Pittsburgh	1.25	1.25	1.30	1.50
Common iron bars, Chicago	1.20	1.20	1.22½	1.47½
Steel bars, Pittsburgh	1.25	1.25	1.40	1.45
Steel bars, tidewater, New York	1.41	1.41	1.56	1.61
Tank plates, Pittsburgh	1.35	1.35	1.40	1.50
Tank plates, tidewater, New York	1.51	1.51	1.56	1.66
Beams, Pittsburgh	1.35	1.35	1.40	1.50
Beams, tidewater, New York	1.51	1.51	1.56	1.66
Angles, Pittsburgh	1.35	1.35	1.40	1.50
Angles, tidewater, New York	1.51	1.51	1.56	1.66
Skelp, grooved steel, Pittsburgh	1.30	1.30	1.30	1.50
Skelp, sheared steel, Pittsburgh	1.35	1.35	1.35	1.60
SHEETS, NAILS AND WIRE, Per Pound:	Cents.	Cents.	Cents.	Cents.
Sheets, black, No. 28, Pittsburgh	2.00	2.00	2.20	2.40
Wire nails, Pittsburgh†	1.80	1.80	1.80	1.80
Cut nails, Pittsburgh†	1.60	1.60	1.60	1.75
Barb wire, galv., Pittsburgh†	2.10	2.10	2.10	2.10
METALS, Per Pound:	Cents.	Cents.	Cents.	Cents.
Lake copper, New York	**12.75**	12.45	12.25	12.87½
Electrolytic copper, New York	**12.50**	12.25	12.12½	12.50
Spelter, St. Louis	**5.32½**	5.25	5.25	5.00
Spelter, New York	5.55	5.55	5.50	5.15
Lead, St. Louis	**4.30**	4.22½	4.25	4.20
Lead, New York	**4.45**	4.37½	4.40	4.37½
Tin, New York	*46.87½*	48.25	41.50	32.60
Antimony, Hallett, New York	8.75	8.75	9.00	8.12½
Tin plate, 100-lb. box, New York	3.94	3.94	3.94	3.84

*The average switching charge for delivery to foundries in the Chicago district is 50c. per ton.

†These prices are for largest lots to jobbers.

Prices of Finished Iron and Steel f.o.b. Pittsburgh

Freight rates from Pittsburgh in carloads, per 100 lb.: New York, 16c.; Philadelphia, 15c.; Boston, 18c.; Buffalo, 11c.; Cleveland, 10c.; Cincinnati, 15c.; Indianapolis, 17c.; Chicago, 18c.; St. Paul, 32c.; St. Louis, 22½c.; New Orleans, 30c.; Birmingham, Ala., 45c. Rates to the Pacific Coast are 80c. on plates, structural shapes and sheets, No. 11 and heavier: 85c. on sheets, Nos. 12 to 16; 95c. on sheets, No. 16 and lighter; 65c. on wrought boiler tubes.

Structural Material.—I-beams and channels, 3 to 15 in., inclusive, 1.35c. to 1.40c., net; I-beams over 15 in., 1.45c. to 1.50c., net; H-beams over 8 in., 1.50c. to 1.55c.; angles 3 to 6 in., inclusive, ¼ in. and up, 1.35c. to 1.40c., net; angles over 6 in., 1.45c. to 1.50c., net; angles, 3 in. on one or both legs, less than ¼ in. thick, 1.40c., plus full extras as per steel bar card effective September 1, 1909; tees, 3 in. and up, 1.40c., net; zees, 3 in. and up, 1.35c. to 1.40c., net; angles, channels and tees under 3 in., 1.40c., base, plus full extras as per steel bar card of September 1, 1909; deck beams and bulb angles, 1.65c. to 1.70c., net; hand rail tees, 2.45c.; checkered and corrugated plates, 2.45c., net.

Plates.—Tank plates, ¼ in. thick, 6¼ in. up to 100 in. wide, 1.35c. to 1.40c., base. Following are stipulations prescribed by manufacturers, with extras to be added to base price (per pound) of plates:

Rectangular plates, tank steel or conforming to manufacturers' standard specifications for structural steel dated February 6, 1903, or equivalent, ¼ in. thick and over on thinnest edge, 100 in. wide and under, down to but not including 6 in. wide, are base.

Plates up to 72 in. wide, inclusive, ordered 10.2 lb. per square foot, are considered ¼-in. plates. Plates over 72 in. wide must be ordered ¼-in. thick on edge, or not less than 11 lb. per square foot, to take base price. Plates over 72 in. wide ordered less than 11 lb. per square foot down to the weight of 3-16-in. take the price of 3-16-in.

Allowable overweight, whether plates are ordered to gauge or weight, to be governed by the standard specifications of the Association of American Steel Manufacturers.

Gauges under ¼-in. to and including 3-16-in. on thinnest edge	$0.10
Gauges under 3-16-in. to and including No. 8	.15
Gauges under No. 8 to and including No. 9	.25
Gauges under No. 9 to and including No. 10	.30
Gauges under No. 10 to and including No. 12	.40
Sketches (including all straight taper plates) 3 ft. and over in length	.10
Complete circles, 3 ft. in diameter and over	.20
Boiler and flange steel	.10
"A. B. M. A." and ordinary firebox steel	.20
Still bottom steel	.30
Marine steel	.40
Locomotive firebox steel	.50
Widths over 100 in. up to 110 in., inclusive	.05
Widths over 110 in. up to 115 in., inclusive	.10
Widths over 115 in. up to 120 in., inclusive	.15
Widths over 120 in. up to 125 in., inclusive	.25
Widths over 125 in. up to 130 in., inclusive	.50
Widths over 130 in.	1.00
Cutting to lengths or diameters under 3 ft. to 2 ft. inclusive	.25
Cutting to lengths or diameters under 2 ft. to 1 ft., inclusive	.50
Cutting to lengths or diameters under 1 ft.	1.55

No charge for cutting rectangular plates to lengths 3 ft. and over.

TERMS—Net cash 30 days.

Sheets.—Makers' prices for mill shipments on sheets in carload and larger lots, on which jobbers charge the usual discounts for small lots from store, are as follows: Blue annealed sheets, Nos. 3 to 8, U. S. standard gauge, 1.40c.; Nos. 9 and 10, 1.50c.; Nos. 11 and 12, 1.55c.; Nos. 13 and 14, 1.60c.; Nos. 15 and 16, 1.70c. One pass, cold rolled, box annealed sheets, Nos. 10 to 12, 1.65c.; Nos. 13 and 14, 1.70c.; Nos. 15 and 16, 1.75c.; Nos. 17 to 21, 1.80c.; Nos. 22, 23 and 24, 1.85c.; Nos. 25 and 26, 1.90c.; No. 27, 1.95c.; No. 28, 2c.; No. 29, 2.05c.; No. 30, 2.15c. Three pass, cold rolled sheets, box annealed, are as follows: Nos. 15 and 16, 1.85c.; Nos. 17 to 21, 1.90c.; Nos. 22 to 24, 1.95c.; Nos. 25 and 26, 2c.; No. 27, 2.05c.; No. 28, 2.10c.; No. 29, 2.15c.; No. 30, 2.25c. Galvanized sheets, Nos. 10 and 11, black sheet gauge, 2c.; Nos. 12, 13 and 14, 2.10c.; Nos. 15, 16 and 17, 2.25c.; Nos. 18 to 22, 2.40c.; Nos. 23 and 24, 2.50c.; Nos. 25 and 26, 2.70c.; No. 27, 2.85c.; No. 28, 3c.; No. 29, 3.10c.; No. 30, 3.30c. All above prices are f.o.b. Pittsburgh, terms 30 days net, or 2 per cent. cash discount 10 days from date of invoice, as also are the following base prices per square for painted and galvanized roofing sheets, with 2½-in. corrugations:

Gauge.	Painted.	Galvanized.	Gauge.	Painted.	Galvanized.
29	....	$2.40	23	$2.40	$3.50
28	$1.40	2.55	22	2.60	3.70
27	1.55	2.60	21	2.80	4.05
26	1.65	2.65	20	3.05	4.35
25	1.85	3.05	18	4.05	5.70
24	2.10	3.15	16	4.90	6.50

Wrought Pipe.—The following are the jobbers' carload discounts on the Pittsburgh basing card on wrought pipe, in effect from October 1:

	Steel Black.	Steel Galv.	Iron Black.	Iron Galv.
Butt Weld.				
1 to 1½ in.	..	..	49	43
½ in.	75	63	71	59
¾ to 1½ in.	79	69	75	65
2 to 3 in.	80	70	76	66
Lap Weld.				
2 in.	76	66	72	62
2½ to 4 in.	78	67	74	64
4½ to 6 in.	77	67	73	63
7 to 12 in.	75	59	71	55
13 to 15 in.	15½	..	..	..
Butt Weld, extra strong, plain ends, card weight.				
½, ¼, ⅜ in.	69	59	65	55
½ in.	74	68	70	64
¾ to 1½ in.	78	72	74	68
2 to 3 in.	79	73	75	69

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Lap Weld, extra strong, plain ends, card weight.				
2 in.	75	69	71	65
2½ to 4 in.	77	71	73	67
4½ to 6 in.	76	70	72	66
7 to 8 in.	69	59	65	55
9 to 12 in.	64	54	60	50
Butt Weld, double extra strong, plain ends, card weight.				
⅛ in.	64	58	60	54
¼ to 1½ in.	67	61	63	57
2 to 3 in.	69	63	65	59
Lap Weld, double extra strong, plain ends, card weight.				
2 in.	65	59	61	55
2½ to 4 in.	67	61	63	57
4½ to 6 in.	66	60	62	56
7 to 8 in.	59	49	55	45

Plugged and Reamed.

1 to 1½, 2 to 3 in. Butt Weld } Will be sold at two (2) points lower basing (higher price) than merchants or card weight pipe. Butt or lap weld, as specified.

2, 2½ to 4 in. Lap Weld }

The above discounts are for "card weight," subject to the usual variation of 5 per cent. Prices for less than carloads are three (3) points lower basing (higher price) than the above discounts.

Boiler Tubes.—Discounts on lap welded steel boiler tubes to jobbers in carloads are now as follows:

	Steel.
1¾ to 2¼ in.	65
2½ in.	67½
2¾ to 3¼ in.	70
3½ to 4½ in.	72½
5 to 6 in.	65
7 to 13 in.	62½

Less than carloads to destinations east of the Mississippi River will be sold at delivered discounts for carloads lowered by two points for lengths 22 feet and under; longer lengths f.o.b. Pittsburgh. Usual extras to jobbers and boiler manufacturers.

Wire Rods and Wire.—Bessemer, open hearth and chain rods, $29. Fence wire, Nos. 0 to 9, per 100 lb., terms 60 days, or 2 per cent. discount in 10 days, carload lots, to jobbers, annealed, $1.60, galvanized $1.90; carload lots, to retailers, annealed $1.65, galvanized $1.95. Galvanized barb wire, to jobbers, $2.10; painted, $1.80. Wire nails, to jobbers, $1.80.

The following table gives the prices to retail merchants on wire in less than carloads, including the extras on Nos. 10 to 16, which are added to the base price:

Fence Wire, Per 100 Lb.

No.	0 to 9	10	11	12 & 12½	13	14	15	16
Annealed	$1.75	1.80	1.85	1.90	2.00	2.10	2.20	2.30
Galvanized	2.05	2.10	2.15	2.20	2.30	2.40	2.80	2.90

Market and Stone Wire in Bundles, Discount from Standard List.

Bright and Annealed:	
9 and coarser	80
10 to 18	80 and 10
19 to 26	80 and 10 and 2½
27 to 36	80 and 5
Galvanized:	
9 and coarser	75 and 10
10 to 16	75 and 10
17 to 26	72½ and 10
27 to 36	72½
Coppered or Liquor Finished:	
9 and coarser	75 and 10
10 to 26	75 and 10
27 to 36	70 and 10 and 5
Tinned:	
6 to 18	75 and 10 and 10

Pittsburgh

PARK BUILDING, June 14, 1911.—*(By Telephone.)*

Pig Iron.—The local pig iron market is showing more life, inquiries being better and some actual sales having been made. The opinion is that prices of pig iron have about touched bottom, with possibly the exception of Bessemer, and it is believed that consumers will buy more freely in the near future than they have been doing for some time. The Standard Sanitary Mfg. Company has bought 1000 tons of Northern No. 2 foundry for its Allegheny and New Brighton, Pa., works, for June and July delivery, at $13.50 at Valley furnace, and also bought 1000 tons of Northern forge, for the same delivery, at $13 at Valley furnace. We quote as follows: Bessemer pig iron, $15 nominally; malleable Bessemer, $13.50; basic, $13.10; No. 2 foundry, $13.50 to $13.75; gray forge, $13, all at Valley furnace, the freight rate to the Pittsburgh district being 90c. per ton.

Steel.—A number of independent sheet and tin plate mills will close down June 30 for inventory and repairs, and for this reason they are taking in as little steel this month as possible, so that specifications against contracts on sheet and tin bars are showing a heavy falling off. There is practically no new inquiry for billets or bars, the local market being very dull, but the prices of steel which went into effect June 1 are holding firm. Quotations are as follows: Bessemer and open hearth billets, 4 x 4 in. and up to, but not including, 10 x 10 in, $21, base, and sheet and tin bars in 30-ft. lengths, $22; 1½-in. billets, $22; forging billets, $26, base, usual extras for sies and carbons —all prices being f.o.b. Pittsburgh or Youngstown districts, freight to destination added.

(By Mail)

As far as sentiment goes the market is better, and the feeling prevails that the worst is over and that improvement may be looked for from this time on. The reduction of prices of steel bars and sheets has stimulated the demand on these two products. Orders for considerable tonnage have been placed with the steel bar mills, while the leading sheet interest reports that its new orders and specifications for sheets last week were the heaviest in any one week for some months. There has been some rail buying in the past week and it is understood that additional inquiries are in the market. A little more inquiry is also observed for pig iron, with some indications of buying in the near future. Several large inquiries are in the market for foundry coke for the last half of the year. No settlement of the puddling and finishing scales was reached at the wage conference at Cambridge Springs, Pa., last week, but this is not taken to indicate that there will be a strike. The Western Bar Iron Association asked for a reduction of 10 per cent. on the present scale, which the representatives of the Amalgamated Association refused to accept, and another conference is to be held commencing July 6, at which a settlement is likely. Independent sheet and tin plate mills will meet the Amalgamated Association in conference on June 22 to consider the sheet and tin plate scales. These will likely be quickly arranged and on the same basis as the present scale.

Ferromanganese.—Inquiry is light, most consumers being covered over remainder of this year. A sale of 50 tons for delivery outside of the Pittsburgh district is reported at a price close to $37, Baltimore. We quote 80 per cent. foreign for delivery over the remainder of this year at $36.50, Baltimore, the rate to Pittsburgh district being $1.95 a ton.

Ferrosilicon.—No new inquiries are in the market and prices are weak. We quote 50 per cent. at $52, Pittsburgh, for delivery through the third quarter; 10 per cent. blast furnace silicon, $22; 11 per cent., $24, and 12 per cent., $25, f.o.b. cars, Ashland and Jisco furnaces.

Muck Bar.—There is still an absence of sales. We continue to quote best grades of muck bar, made from all pig iron, at nominally $28.50, Pittsburgh.

Skelp.—Consumers defer placing orders for skelp in the belief that prices will be lower in sympathy with other lines of finished material. We quote grooved steel skelp, 1.27½c. to 1.30c.; sheared steel skelp, 1.32½c. to 1.35c.; grooved iron skelp, 1.55c. to 1.60c., and sheared iron skelp, 1.65c. to 1.70c., all for delivery at consumers' mills in the Pittsburgh district, usual terms.

Wire Rods.—A sale of 500 tons of Bessemer rods for July and August shipment is reported on the basis of $29, Pittsburgh. Few sales are being made, most consumers rolling their own rods, and specifications against contracts are only fair. We quote Bessemer, open hearth and chain rods at $29, Pittsburgh.

Steel Rails.—Several orders have been placed in the past week and fairly large inquiries are in the market. The Missouri Pacific has bought 28,000 tons, of which 5000 tons went to the Illinois Steel Company and 23,000 tons to the Tennessee Coal, Iron & Railroad Company. The Kansas City Southern has bought 14,000 tons, of which 9200 tons went to the Illinois Steel Company and 4800 tons to the Pennsylvania Steel Company. The Philadelphia & Reading has bought 4000 tons of Bessemer rails from the Maryland Steel Company. The Baltimore & Ohio is talking of laying 7500 tons on its division south of Parkersburg, but the inquiry for these rails has not yet come out. The Carnegie Steel Company has entered several fairly large orders for standard sections for export and had a fairly good week in light rails. Prices on light rails are as follows: 12-lb. rails, 1.25c.; 16, 20 and 25-lb., 1.21c. to 1.25c.; 30 and 35-lb., 1.20c., and 40 and 45-lb., 1.16c. The prices are f.o.b. at mill, plus freight, and are the minimum of the market on carload lots, small lots being sold at a little higher price. Standard sections are held at 1.25c. per pound.

Structural Material.—Little new work is being figured on in this district, but local concerns are bidding on a large amount of work in the East and in the Chicago district. The Jones & Laughlin Steel Company has taken 1000 tons of sheet steel piling for the large new dry dock being built by the Newport News Shipbuilding & Dry Dock Company and also 500 tons of sheet steel piling from Jacobs & Davies for the Hales Bar dam on the Tennessee River near Chattanooga. The Fort Pitt Bridge & Iron Works has taken 175 tons for

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extensions to the Smithfield street bridge in this city and the McClintic-Marshall Construction Company has taken 1200 tons of bridge work for the Pittsburgh & Lake Erie Railroad. We quote beams and channels up to 15 in. at 1.35c., Pittsburgh.

Plates.—Car orders have been light. The Canadian Pacific Railroad has increased its recent order placed with the Pressed Steel Car Company from 400 to 430 general service cars and the latter has taken an order for 12 street cars for the United Traction Company, Albany, N. Y. The Treadwell Construction Company, Midland, Pa., is the low bidder on the aqueduct for the water works for Los Angeles, Cal., requiring 4200 tons of plates, which will be furnished by a local mill. We quote sheared plates ¼ in. and heavier at 1.35c., Pittsburgh.

Sheets.—A material betterment in new demand and specifications for sheets is reported. The American Sheet & Tin Plate Company states that it entered more orders for sheets and received more specifications against contracts in the past week than in any one week in some months. Some of the independent sheet mills also report a material increase in orders. The new prices adopted June 1, while generally well maintained, are being slightly shaded for desirable orders in certain localities. The full schedule of prices on black and galvanized and on roofing sheets is given on a previous page.

Tin Plate.—Last Monday the American Sheet & Tin Plate Company started up 16 of the 23 hot tin mills in its Laughlin Works at Martins Ferry, Ohio, this being the first time that this plant has been in even partial operation for some months. This company is making arrangements to equip all its sheet and tin plate mills with cooling devices for the protection of the men in the hot months, the next installation of this system to be at its Vandergrift Works, which contains 32 hot sheet mills and 5 hot tin mills. The new demand for tin plate is dull, but specifications from the can makers continue to come in quite freely. We quote 100-lb. cokes, 14 by 20, at $3.70 per box, f.o.b. Pittsburgh.

Bars.—Inquiries have been coming in quite freely from the implement makers for their supply of bars for the year beginning July 1 and the past week orders for considerable tonnage were closed. Most of this was on the basis of 1.25c., Pittsburgh, but in some cases 1.20c. is reported to have been done. Some of the bar iron mills will close down on July 1 for inventory and repairs. We quote steel bars at 1.25c. and common iron bars at 1.25c. to 1.30c. f.o.b. Pittsburgh.

Shafting.—The recent reduction in prices of shafting has not increased the demand to any extent, while specifications against contracts are still unsatisfactory to the makers. Regular discounts on shafting are 60 per cent. off in carloads and 55 per cent. in less than carloads and are pretty well maintained.

Spelter.—The market is quiet and prices are only fairly strong. We quote prime grades of Western spelter at 5.20c., East St. Louis, equal to 5.32½c. Pittsburgh.

Hoops and Bands.—Several makers report that specifications against contracts for hoops and bands have been coming in quite freely in the past week, but the new demand is only for small lots to cover actual needs. We quote steel hoops at 1.40c. and bands at 1.25c., base, extras on the latter as per the steel bar card.

Merchant Steel.—The new demand continues light and only for small lots, while specifications against contracts are still very unsatisfactory. Makers' prices, which, however, are being shaded, are as follows: Iron finished tire, ½ x 1½ in. and heavier, 1.40c., base; under these sizes, 1.55c.; planished tire, 1.60c.; channel tire, 1.80c., base; toe calk, 1.90c.; flat sleigh shoe, 1.55c.; concave or convex, 1.75c.; cutter shoes, tapered or bent, 2.25c.; spring steel, 2c.; machinery steel, smooth finish, 1.90c.

Rivets.—There is considerable inquiry for rivets, but orders are very slow in being placed, consumers buying only what they absolutely need to meet current wants. We quote structural rivets at 1.75c. and boiler rivets at 1.80c., but these prices are sometimes shaded on desirable orders.

Wire Products.—In nearly all cases all unshipped tonnage on contracts for wire and wire nails placed some time ago when prices were lower than they are now was canceled June 1, exceptions to this being made only in cases where existing conditions warranted. The new demand for wire nails is light, jobbers and retailers taking in only such quantities as are absolutely required to maintain stocks or to fill current orders. The trade for this season is pretty well over and the next three months in the wire trade will likely be quiet. We quote galvanized barb wire at $2.10; painted, $1.80; annealed fence wire, $1.60; galvanized, $1.90; wire nails, $1.80, and cut nails, $1.60, f.o.b. Pittsburgh, full freight to destination added.

Spikes.—The only inquiry of note is one from one of the Southern roads for 1000 kegs. The railroads are only buying small lots to cover actual needs. We quote standard sizes of railroad spikes at $1.50 base per keg f.o.b. Pittsburgh, with the usual extras for odd sizes.

Merchant Pipe.—A fair amount of new business is being placed with the mills, and actual orders entered so far in June are said to show a slight increase over the first half of May. Several large inquiries for gas lines are in the market, one calling for upward of 300 miles of 16 to 20 in. Discounts on iron and steel pipe printed on a previous page are reported as being maintained.

Boiler Tubes.—This trade continues in very unsatisfactory condition as regards new demand, which is very dull and only for small lots, while the discounts adopted some time ago are being more or less shaded.

Coke.—Three or four fairly large consumers of foundry coke are in the market for their supply for the last half of the year, and in one case for the entire year beginning July 1. A sale is reported of about 15,000 tons of furnace coke, not regarded as strictly high grade, at $1.40 per net ton at oven, for shipment over the remainder of June. It is believed that prices on coke have about reached bottom and the heavy reduction in output is expected to benefit the market. The production in the Upper and Lower Connellsville regions last week was 269,256 tons, a decrease over the previous week of about 1500 tons. We quote standard makes of 72-hour foundry coke for spot shipment at $1.75 to $1.85, and for second half of the year at $2 to $2.40 per net ton at oven, some producers refusing to sell at a lower price than $2.40.

Iron and Steel Scrap.—The market continues very quiet, and some dealers who have scrap loaded on cars which they are forced to move are offering it at slightly lower prices. Two of the largest consumers of heavy steel scrap in the Pittsburgh district have asked that shipments be held up for the time being as they expect to shut down June 30 for inventory and repairs. All the leading consumers of heavy steel scrap are pretty well covered, one concern having the largest stock it has carried for some years. Dealers are quoting, per gross ton, Pittsburgh, about as follows:

Heavy steel scrap Steubenville, Follansbee, Sharon, Monessen and Pittsburgh delivery.	$12.75 to $13.00
No. 1 foundry cast	13.50 to 13.75
No. 2 foundry cast	12.50 to 12.75
Bundled sheet scrap, at point of shipment	10.25 to 10.50
Rerolling rails, Newark and Cambridge, Ohio, and Cumberland, Md.	13.50 to 13.75
No. 1 railroad malleable stock	12.00
Grate bars	10.50 to 10.75
Low phosphorus melting stock	16.50 to 16.75
Iron car axles	24.25 to 24.50
Steel car axles	18.50 to 18.75
Locomotive axles	23.00
No. 1 busheling scrap	12.00 to 12.25
No. 2 busheling scrap	8.50 to 8.75
Old car wheels	13.50 to 13.75
Sheet bar crop ends	15.50 to 15.75
*Cast iron borings	8.75 to 9.00
*Machine shop turnings	9.00 to 9.15
Old iron rails	15.00 to 15.25
No. 1 wrought scrap	14.25 to 14.50
Heavy steel axle turnings	10.25
Stove plate	10.50 to 10.75

*These prices are f.o.b. cars at consumers' mill in the Pittsburgh district.

Chicago

FISHER BUILDING, June 14, 1911.—*(By Telegraph.)*

In the finished steel lines the past week's bookings have been very satisfactory. The railroads were the important factor in the placing of this tonnage, particularly in the matter of rails. With these rails came liberal specifications for rail joints and track fastenings, while structural shapes and plates shared in the activity through the placing of orders for steel cars and bridges. Building structural material had but little place in the week's tonnage, the largest item being about 4000 tons for the Pacific coast. It is interesting to note that the agricultural implement makers are displaying a substantial activity in providing for their sheet requirements while they continue to be apathetic with reference to steel bars.

Pig Iron.—Various inquiries of several hundred tons each are reported as being current in this market

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and a few sales of iron in like volume for delivery during the last half have been made. Offers to furnaces of tonnage at prices below the present market reflect an apparently general feeling among the melters that the lowest prices have not yet been reached. For Southern iron $10.25, Birmingham, has been quoted and buyers offering $10 for prompt shipment iron are not unfriendly received. A disposition to move scattered quantities of Northern iron at slight concessions from the market has also rather weakened the position of local iron at $15 at furnace. The accumulation of stocks in consumers' as well as furnace yards is a discouraging feature. The following quotations are for Chicago delivery, with the exception of Northern irons, which are quoted f.o.b. furnace.

Lake Superior charcoal	$17.00
Northern coke foundry, No. 1	15.50
Northern coke foundry, No. 2	15.00
Northern coke foundry, No. 3	14.75
Northern Scotch, No. 1	16.00
Southern coke, No. 1 foundry and No. 1 soft	15.10
Southern coke, No. 2 foundry and No. 2 soft	14.60
Southern coke, No. 3	14.35
Southern coke, No. 4	14.10
Southern gray forge	14.35
Southern mottled	14.35
Malleable Bessemer	15.00
Standard Bessemer	17.40
Basic	15.50
Jackson Co. and Kentucky silvery, 6 per cent	17.90
Jackson Co. and Kentucky silvery, 8 per cent	18.90
Jackson Co. and Kentucky silvery, 10 per cent	19.90

(By Mail)

Rails and Track Supplies.—A distinct improvement in the tonnage booked characterized the past week's railroad business. A total of about 15,000 tons of rails was placed with the local mill, of which 5000 tons came from the Missouri Pacific and 5000 tons from the Pere Marquette Railroad. The former road has now contracted for approximately 50,000 tons of rails, of which 22,000 tons will be rolled by the Colorado Fuel & Iron Company, and 22,800 tons by the Tennessee Coal, Iron & Railroad Company. It is understood that the Lackawanna Steel Company will roll 8000 tons of 56-lb. rails for the National Railways of Hayti. Current rail orders have carried with them a very satisfactory volume of angle bar, spike and track bolt orders. Track bolt prices are not distinctly firm and we are modifying our quotation slightly. We quote standard railroad spikes at 1.65c. to 1.75c., base; track bolts with square nuts, 2.10c. to 2.20c., base, all in carload lots, Chicago. Standard section Bessemer rails, 1.28c.; open hearth, 1.34c.; light rails, 40 to 45 lb., 1.16c. to 1.20½c.; 30 to 35 lb., 1.19½c. to 1.24c.; 16, 20 and 25 lb., 1.20½c. to 1.25c.; 12 lb., 1.25c. to 1.30½c.; angle bars, 1.50c. to 1.60c. Chicago.

Structural Material.—The lettings of structural material were light during the past week and but few items of market importance can be recorded. The contract for 3388 tons of steel for the city hall at Oakland, Cal., was obtained by the Judson Mfg. Company, San Francisco, and the Roebling Construction Company will furnish about 600 tons of reinforcing bars. Contracts were also let for 139 tons for the Buchanan Electric Steel Company's building at Buchanan, Mich., and for 122 tons for a power house for the Mount Hood Railway & Power Company in Oregon. We quote plain material from mill at 1.53c. to 1.58c., Chicago, and from store, 1.75c.

Plates.—Recent orders from the railroads for steel cars have brought into the market some desirable specifications for plates and underframe structural shapes. One local interest reports prompt shipment orders for material sufficient to build 1000 cars. With reference to prices, practically no weakness is reported, but it appears equally evident that confidence in the permanency of the present basis is lacking. Chicago quotations for mill shipment are 1.53c. to 1.58c.; from store, 1.75c.

Sheets.—Improvement is noted in the temper of sheet users. Inquiry is much more substantial, both in volume and character, and it is reported that a more settled feeeling prevails. Orders, while none too plentiful, were more numerous and the interest being shown by the agricultural implement makers is apparent. Prices show no indications of weakness. Chicago prices are as follows: Carload lots, from mill: No. 28 black sheets, 2.18c.; No. 28 galvanized, 3.08c.; No. 10 blue annealed, 1.68c. Prices from store, Chicago, are: No. 10, 1.95c. to 2.05c.; No. 12, 2.00c. to 2.10c.; No. 28 black, 2.60c. to 2.70c.; No. 28 galvanized, 3.35c. to 3.45c.

Bars.—As the season approaches more closely to the end of the contracting year, and the necessity for establishing manufacturing schedules becomes more pressing, agricultural implement manufacturers are displaying more real interest in steel bars. Some buying of bars is noted, but of the 500,000 tons which this territory ordinarily engages in its annual contracts a comparatively small portion only has been taken. Before the large volume of business is placed it seems probable that the bar price will have been tested to the limit of its strength. Attention seems to be directed to this situation as an indicator of how all finished material prices will move. We quote as follows, f.o.b. Chicago: Soft steel bars, 1.43c.; bar iron, 1.20c. to 1.25c.; hard steel bars, rolled from old rails, 1.20c. to 1.25c. From store, soft steel bars, 1.70c. to 1.80c., Chicago.

Billets.—Inquiry for car axle billets during the week developed a firm attitude on the part of makers in the matter of prices, but moderate business in the accustomed channels is the market's only activity. We quote forging billets at $28.60, Chicago, and rerolling billets, $23.60.

Wire Products.—The activity of trade in wire products has quieted during the present between-season period. Reports from the leading manufacturers indicate that most satisfactory conditions prevail. Jobbers' carload prices, which are quoted to manufacturing buyers, are as follows: Plain wire, No. 9 and coarser, base, 1.78c.; wire nails, 1.98c.; painted barb wire, 1.98c.; galvanized, 2.28c.; polished staples, 1.98c.; galvanized, 2.28c., all Chicago.

Cast Iron Pipe.—A contract for 500 tons of pipe for the city of Basin, Wyo., was taken by the leading interest, but the Leone, Iowa, letting of 300 tons was placed elsewhere. The San Diego, Cal., order mentioned last week was placed Tuesday. Prices continue firm. We continue to quote as follows, per net ton, Chicago: Water pipe, 4 in., $25.50; 6 to 12 in., $24.50; 16 in. and up, $24, with $1 extra for gas pipe.

Old Material.—A list carrying a large part of the accumulated tonnage of scrap held by the Atchison, Topeka & Santa Fe Railroad was offered in this market last week. Some very low prices were quoted and had any of the material been sold several of the current quotations would be found from 25c. to 50c. a ton too high. The Chicago, Milwaukee & St. Paul's list is about 1000 tons and the Soo line is asking bids on 500 tons. Prices are slightly lower in some lines, but, in the present status of the market, prices at which buyers can be attracted are too low to bring out any tonnage for sale. We revise prices and quote below for delivery to buyers' works, all freight and transfer charges paid, per gross ton:

Old iron rails	$14.00 to $14.50
Old steel rails, rerolling	12.00 to 12.25
Old steel rails, less than 3 ft	11.00 to 11.50
Relaying rails, standard sections, subject to inspection	24.00
Old car wheels	12.50 to 13.00
Heavy melting steel scrap	10.25 to 10.75
Frogs, switches and guards, cut apart	10.00 to 10.50
Shoveling steel	9.75 to 10.25
Steel axle turnings	8.50 to 9.00
The following quotations are per net ton:	
Iron angles and splice bars	$12.50 to $13.00
Iron arch bars and transoms	13.75 to 14.25
Steel angle bars	10.25 to 10.75
Iron car axles	18.00 to 18.50
Steel car axles	16.00 to 16.50
No. 1 railroad wrought	11.00 to 11.50
No. 2 railroad wrought	10.00 to 10.50
Steel knuckles and couplers	9.00 to 9.50
Locomotive tires, smooth	16.25 to 16.75
Machine shop turnings	6.25 to 6.75
Cast and mixed borings	5.25 to 5.75
No. 1 busheling	8.75 to 9.25
No. 2 busheling	6.75 to 7.25
No. 1 boilers, cut to sheets and rings	7.50 to 8.00
Boiler punchings	12.00 to 12.50
No. 1 cast scrap	10.25 to 10.75
Stove plate and light cast scrap	9.00 to 9.50
Railroad malleable	10.00 to 10.50
Agricultural malleable	9.25 to 9.75
Pipes and flues	8.00 to 8.50

Cincinnati

CINCINNATI, OHIO, June 14, 1911.—*(By Telegraph.)*

The recent price reduction has apparently encouraged consumers to ask for still further cuts and several Southern producers have made additional recessions, bringing the prompt shipment quotations on No. 2 foundry down to $10.25, Birmingham basis. It is also understood that this figure has been shaded on a few special sales. Southern furnaces are generally asking $10.50 for movement during the remainder of the year, and at this figure 300 and 1000 tons were sold to two Illinois consumers. A central Ohio melter also took

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150 tons of No. 3 foundry at $10 at furnace. Northern iron interests do not show much willingness to meet Southern competition and are transacting very little business, although a 4000-ton sale of Ohio basic was made to a southern Ohio manufacturer, with shipments running through November. It is rumored that a few brands of Northern foundry iron can be bought for prompt delivery below the regular quotable figure of $13.50, Ironton, but as production in the Hanging Rock district is fully 60 per cent, below normal it is not probable that any large tonnage could be taken on at a sacrifice just now. There is no inquiry for malleable, which is quotable around $13.75, Ironton. Based on freight rates of $3.25 from Birmingham and $1.20 from Ironton we quote, f.o.b. Cincinnati, as follows:

Southern coke, No. 1 foundry and 1 soft	$14.00 to $14.50
Southern coke, No. 2 foundry and 2 soft	13.50 to 14.00
Southern coke, No. 3 foundry	13.25 to 13.50
Southern coke, No. 4 foundry	12.75 to 13.00
Southern gray forge	12.25 to 12.75
Ohio silvery, 8 per cent. silicon	17.45 to 17.70
Lake Superior coke, No. 1	15.20
Lake Superior coke, No. 2	14.70
Lake Superior coke, No. 3	14.20
Basic, Northern	14.95 to 15.20
Standard Southern car wheel	25.75 to 26.25
Lake Superior car wheel	19.50

(By Mail)

Coke.—Probably due to the desire of a number of producers to get their coal screenings out of the way foundry coke has not been so firm in either the Pocahontas or Wise County fields. In the former district a few contracts for shipment during the remainder of the year have been taken on around $1.90 to $2 per net ton at oven, and Wise County 72-hour coke is available at $2 to $2.15 for either prompt or deferred shipment. Connellsville foundry grades are holding up better than some previous reports indicated and contract prices range all the way from $2 to $2.25 at oven. In all three fields there are special brands on which quotations made above the regular prices. Furnace coke is weak. The banking of a number of blast furnaces in the Ironton district as well as in other producing sections naturally affects prices, and for spot shipment 48-hour coke is obtainable in all three districts at an average price of $1.40 per net ton at oven, but $1.45 to $1.70 is asked on contract business, with deliveries running throughout the next 12 months, if desired.

Finished Material.—Business is generally reported as being somewhat disappointing. Buyers appear to be holding off with the belief that prices will be further reduced, and a number of mill agencies and dealers state that they do not look for much improvement until customers realize that there will be no additional cuts in present figures. Although some improvement is to be reported in the steel bar demand it is not large enough to give the entire credit to the recent price reduction. Structural material is moving only fairly well. Mill prices are firmly maintained at 1.35c. for shapes and plates and at 1.25c. Pittsburgh for steel bars. The warehouse quotation on steel bars is around 1.70c.

Old Material.—The railroads are reported to be offering large lots of scrap material, but prices that dealers are willing to pay are not satisfactory and as a consequence very little scrap is changing hands. The softening of pig iron prices has evidently caused the dealers to hesitate, and as they all have good-sized yard stocks now there will probably be no scramble to take on additional material at present market quotations. Prices for delivery in buyers' yards, southern Ohio and Cincinnati, are as follows:

No. 1 railroad wrought, net ton	$11.50 to $12.00
Cast borings, net ton	4.50 to 5.00
Steel turnings, net ton	5.50 to 6.00
No. 1 cast scrap, net ton	9.50 to 10.00
Burnt scrap, net ton	6.50 to 7.00
Old iron axles, net ton	16.50 to 17.00
Bundled sheet scrap, gross ton	7.25 to 8.25
Old iron rails, gross ton	13.50 to 14.00
Relaying rails, 50 lb. and up, gross ton	21.00 to 22.00
Old car wheels, gross ton	10.75 to 11.75
Heavy melting steel scrap, gross ton	10.00 to 10.50

Cleveland

CLEVELAND, OHIO, June 13, 1911.

Iron Ore.—No sales of any size are being made and the outlook shows no improvement. Further curtailment of the output is in progress all over the Lake Superior district. Some underground mines are being shut down, having accumulated large stock piles, and a number of open pit properties that have not been started up this season will probably not be operated. Conditions in the lake shipping industry show no improvement. Shippers are carrying practically all their ore in their own boats with the exception of the Pittsburgh Steamship Company, which has done a little outside chartering. It is estimated that about 95 lake boats have not yet gone into commission, representing a capacity of approximately 650,000 tons on a single trip. Most of these boats will probably remain idle all the season. We quote prices as follows: Old Range Bessemer, $4.50; Mesaba Bessemer, $4.25; Old Range non-Bessemer, $3.70; Mesaba non-Bessemer $3.50.

Pig Iron.—The market is very quiet, with no sales or inquiries of any size. Foundries are taking no interest in the market as far as their last half requirements are concerned and not much buying for that delivery is looked for during the present month. Some producers report that hold up orders on shipments are more numerous. Many foundries will have enough iron left from their first half purchases to last them well into the third quarter. While prices have remained stationary for some time there has not been enough business to test the market and it is believed that a good inquiry would bring out lower quotations on foundry grades. The sale of 300 tons of No. 2 Southern for the third quarter delivery in northern Ohio was at $10, Birmingham. Stack A of the Detroit Iron & Steel Company was blown out during the week and will be relined. Another merchant furnace in the Valley may be blown out shortly. For prompt shipment and for the last half we quote delivered, Cleveland, as follows:

Bessemer	$15.90
Basic	14.00
Northern foundry, No. 2	14.25
Gray forge	13.25
Southern foundry, No. 2	$14.35 to 14.85
Jackson Co. silvery, 8 per cent. silicon	17.75 to 18.00

Coke.—Many contracts for foundry grades expire at the end of this month so that dealers are looking for some improvement in buying. At present the market is very quiet, sales being limited mostly to carload lots. We quote standard Connellsville furnace coke at $1.45 to $1.55 per net ton, at oven, for prompt shipment, and $1.75 to $1.85 for the last half. Connellsville 72-hr. foundry coke is held at $1.90 to $2.15 for prompt shipment and $2 to $2.40 for the last half.

Finished Iron and Steel.—The recent cut in prices appears to have brought about some improvement in the demand for steel bars, new orders coming largely from manufacturers who had allowed their stocks to run low. The demand for structural material is more active at present, not, however, because of price reduction; and some structural contracts are being held up. The demand for plates continues very dull. The seller who took on some steel bar tonnage in this market at 1.20c. Pittsburgh appears to have withdrawn that quotation, and regular prices seem now to be fairly well maintained on bars, plates and shapes. While some rumors of price cutting are heard, they are unconfirmed, and if any shading is done the concessions are made very cautiously. New structural contracts placed include 800 tons for the plant of the Peck, Stow & Wilcox Company, Southington, Conn., 850 tons for bridge work for the Lake Shore Railroad, and 450 tons for a new plant to be built by the Goodyear Tire & Rubber Company, Akron, Ohio, all taken by the American Bridge Company; and 1350 tons for the central Y. M. C. A. building, Cleveland, which went to T. H. Brooks & Co., Cleveland. Bethlehem sections will be largely used in this building. A number of other inquiries have come out for work requiring small tonnages. The demand for sheets is more active than before the recent price reduction. Present prices are not being maintained by all of the mills, some of the Valley producers making quotations with a Valley instead of a Pittsbugh base, which amounts to a concession of about $1 a ton for shipment to Cleveland and many other points. The demand for iron bars is not active. Local mills quote iron bars at 1.25c. but this price is reported shaded to 1.20c. in other territories.

Old Material.—Practically no demand exists for any grade of scrap. Mills are well stocked up and some are holding back on shipments. Producers refuse to sell at present prices so that dealers complain that they can neither buy nor sell. Prices are weak. Quotations for the most part remain unchanged, however, as the absence of sales makes quotations largely nominal.

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Local consumers are offering only $11 for heavy steel scrap, but none is for sale at that price. Dealers' prices per gross ton, f.o.b. Cleveland, are as follows:

Old steel rails, rerolling	$13.00 to $13.50
Old iron rails	15.00 to 15.50
Steel car axles	17.50 to 18.00
Heavy melting steel	11.25 to 11.50
Old car wheels	11.50 to 12.00
Relaying rails, 50 lb. and over	22.50 to 23.50
Agricultural malleable	10.75 to 11.00
Railroad malleable	11.50 to 12.00
Light bundled sheet scrap	7.50 to 8.00

The following prices are per net ton, f.o.b. Cleveland:

Iron car axles	$21.00 to $21.50
Cast borings	6.00 to 6.25
Iron and steel turnings and drillings	6.50 to 6.75
Steel axle turnings	8.00 to 8.50
No. 1 busheling	9.50 to 10.00
No. 1 railroad wrought	11.50 to 12.00
No. 1 cast	11.25 to 11.50
Stove plate	9.50 to 10.00
Bundled tin scrap	11.00 to 11.50

Philadelphia

PHILADELPHIA, PA., June 13, 1911.

Market conditions in this territory show practically no change. Buyers as a rule pay current prices for prompt requirements, but show little disposition to purchase for forward account. The market still lacks snap, although in some instances orders for rolled products have been somewhat more extensive, largely because of consumers' requirements in the usual midsummer shut-down. The market for pig iron drags. A little business has been done in the steel making grades, but the general foundry trade does not show much interest. Lower prices, both for crude and finished materials, have so far failed to bring out any marked increase in the demand in this vicinity. A somewhat better movement in foundry coke is reported. Old material has not been active, but prices remain fairly stationary. While statistics are not available, it is stated that reports made to the Eastern and the Virginia Pig Iron Associations, the former having held its meeting last week, show stocks in furnace yards to be gradually decreasing, while orders have been on a fairly even basis. Deliveries have been slightly in excess of the current make and a further reduction in the output is in sight.

Iron Ore.—The market is devoid of any features. No fresh business is reported. Consumers, at the present rate of furnace activity, find it difficult in some cases to take care of purchases already made. Importations at the port in the week ending June 10 were confined to a single cargo of 5800 tons of Cuban ore.

Pig Iron.—While some little buying has taken place in steel making and foundry grades, the market is gradually becoming quieter. Consumers, who have been buying somewhat more freely of late, are now pretty well covered and have again practically dropped out of the market. It is now pretty well established that the recent quiet deal in basic iron, in which one of the Eastern mills was the purchaser, covered 25,000 tons for fourth quarter delivery, and that the price did not exceed current quotations. A further transaction, covering about 5000 tons of this grade for third quarter delivery, has been consummated in the week at a price somewhat under $14.75, delivered, the actual price being governed by the freight rate. Another consumer has been testing the market with an inquiry for 5000 to 10,000 tons for third quarter delivery, but has not placed the order. Moderate lot sales of standard low phosphorus iron continue to be made at prices ranging from $20,50 to $20.75, delivered in this vicinity. There is still some business in Virginia foundry grades, the principal sales being made by the leading interest in that section, at $12.25, furnace. Small lot sales are also reported by other sellers at $12.50, furnace, shipments not extending, however, beyond the third quarter. The bulk of the sales of eastern Pennsylvania foundry irons has been of the small lot character, standard brands commanding from $15.25 to $15.50, delivered. Soil pipe makers and stove foundries have taken moderate quantities of iron. In the majority of cases orders have been divided among several sellers. One of the Delaware River cast iron pipe foundries is reported to have closed against its recent inquiry for 4000 tons Southern iron, it is said. Other pipe makers are testing the market to some extent, but their ideas of prices are usually below the present market. An absence of any material inquiry for forge iron still exists. With the usual midsummer suspension of the rolling mills close at hand, consumers are disposed to move slowly. The market generally has a stand pat appearance. Consumers, anticipating quiet conditions in the summer months, are not looking very far ahead, but are taking care of requirements as they develop. Producers are disinclined to force business, and await further developments. The rate of production in this district will evidently be further decreased before the end of the month, as Carbon Furnace and the remaining Swede Stack now in blast are to be blown out. At the rate at which deliveries are now being taken, shipments are in excess of the current make, and a further decrease in stocks is expected at the close of the month. The following range of prices is named for standard brands, delivered in buyers' yards in this district, shipments extending up to the end of the first quarter:

Eastern Pennsylvania No. 2 X foundry	$15.25 to $15.50
Eastern Pennsylvania No. 2 plain	15.00 to 15.25
Virginia foundry	15.05 to 15.50
Gray forge	14.50 to 14.75
Basic	14.50 to 14.75
Standard low phosphorus	20.50 to 20.75

Ferromanganese.—The market is extremely quiet, sellers reporting practically an entire absence of any inquiry. Quotations are nominal at $36.50, Baltimore, for either prompt or remainder of the year delivery.

Billets.—Current orders are very light. Specifications on old contracts come out freely, but, as a rule, are for small lots only. Consumers still refuse to consider business of a forward nature and transactions are confined to small lots, seldom exceeding 100 tons. Forging billets are in slightly better demand than rolling billets. The recently established prices are maintained, open hearth rolling billets commanding $23.40, and ordinary forging billets $28.40, delivered in this territory.

Plates.—Eastern mills report about an even run of business, both in the way of new orders and specifications on old contracts. Consumers in this district are still disposed to confine their orders to small lots covering current requirements, although an occasional sizable order comes to the mills. Inquiry is slightly better, and the trade looks forward to a decidedly more aggressive buying movement in the not distant future. On the general run of business the new price basis is readily obtained, ordinary plates being quoted at 1.50c. minimum, delivered in this vicinity.

Structural Material.—Business in the week is reported as rather quiet. Few contracts of any size were placed, while new projects develop slowly. No new work has been offered in the way of bridges or industrial buildings. The McClintic-Marshall Construction Company has been awarded the contract for the new creosoting plant for the Reading Railway at Port Reading, N. J., requiring about 185 tons. From the fact that the clearing of the site for the new Ritz Hotel, at Broad and Walnut streets, has begun, the early development of this project is anticipated. A fair demand for plain shapes is reported, with prices firm at 1.50c. minimum, delivered in this territory.

Sheets.—Orders have been coming out more freely, and consumers are placing specifications to cover their requirements over the usual midsummer period of suspension of the mills. Current orders are still small in size, very little if any contracting for extended delivery being reported. Mills are somewhat more actively engaged and will probably so continue until the month end. The following range of prices is named, f.o.b.: Eastern maker's mill: Nos. 18 to 20, 2.30c.; Nos. 22 to 24, 2.40c.; Nos. 25 and 26, 2.50c.; No. 27, 2.60c.; No. 28, 2.80c.

Bars.—The situation is practically unchanged. Some contracts for steel bars have been placed at the new price basis, but the market is by no means active. The demand for refined iron bars still drags. Occasional carload orders are placed. No further price concessions are reported. Steel bars are firm at 1.40c., delivered here, while refined iron bars are quoted at 1.27½c. to 1.35c., delivered, according to specifications and tonnage.

Coke.—Somewhat greater activity in foundry coke is noted. In several cases contracts for moderate quantities for delivery in the remainder of the year or for a full 12 months are reported at $2.10 to $2.30, ovens. Prompt foundry coke is still available at prices ranging from $1.90 to $2.10, ovens. Very little business has been done in furnace coke, quotations for which still range from $1.40 to $1.75, ovens, according to delivery.

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The following range of prices is named, per net ton, for delivery in this territory:

Connellsville furnace coke	$3.70 to $4.05
Foundry coke	4.10 to 4.55
Mountain furnace coke	3.30 to 3.65
Foundry coke	3.70 to 4.15

Old Material.—While the general market drags, an occasional sizable transaction is reported. The Alan Wood Iron & Steel Company was awarded the 2011 tons of Panama scrap, sold last week, at $10.67. While the major portion of the transactions in heavy melting steel has been between brokers, who pay around $13, delivered, to apply on old contracts, one purchase of 5000 tons of strictly No. 1 railroad steel, for delivery over four months, is reported at $13.50, delivered. Prices for turnings and borings have become firmer. Higher prices in other markets are taking a good share of the available supply and local consumers offer slightly better prices than recently quoted. Heavy rolling mill grades are quiet. Although in some instances quotations are still nominal, the following range of prices about represents the market for small lots delivered in buyers' yards, eastern Pennsylvania and nearby points, carrying a freight rate from Philadelphia varying from 35c. to $1.35 per gross ton, being named as follows:

No. 1 heavy melting steel scrap	$13.00 to $13.25
Old steel rails, rerolling	13.75 to 14.25*
Low phosphorus heavy melting steel scrap	16.75 to 17.25
Old steel axles	19.25 to 19.75*
Old iron axles	24.00 to 24.50
Old iron rails	16.50 to 17.00
Old car wheels	13.00 to 13.50
No. 1 railroad wrought	15.00 to 15.50
Wrought iron pipe	12.00 to 12.50
No. 1 forge fire	10.50 to 11.00
No. 2 light iron	6.75 to 7.25*
Wrought turnings	8.50 to 9.00
Cast borings	8.00 to 8.50
Machinery cast	13.00 to 13.50
Railroad malleable	11.50 to 12.00
Grate bars, railroad	10.00 to 10.50
Stove plate	9.75 to 10.25

*Nominal.

St. Louis

ST. LOUIS, MO., June 12, 1911.

Aside from some orders for steel rails there has not been enough business transacted the past week to give any particular character to the situation. There is, of course, a fairly steady consumption of pig iron and likewise of coke, but this is of the kind that is with us pretty much all through the year, and while it yields profits of the bread and butter character it does not particularly affect quotation conditions. The same feeling that has existed for the past few weeks, that the last half of the year will see some busy times, continues, but it has not assumed the tangible shape of orders.

Pig Iron.—The consumption of pig iron along the steady lines noted last week continues, the large consumers still being out of the market and the smaller melters running according to demands. Among these latter the requirements maintain a steadiness that develops a very fair total of business. There have been no exceptional purchases during the week and the quietude, therefore, is general. Although the quotations nominally are at $10.50 to $11 for No. 2 Birmingham there are reports in the market of sales as low as $10.25 and even $10, but not one of the furnacemen is willing to admit that he personally has made such a sale. At the same time there is a belief that concessions are being made in order to turn over stocks on hand, but under such conditions as to avoid making an official precedent for future reference. There has been no change in the quotations, nominally, in No. 2 Northern foundry iron, either for July shipment or for the last half, and the same situation applies as to basic. There are statements, however, of sales of basic at $13.50 to $14 at furnace, according to conditions of the sale. The agricultural implement, stove foundry and similar requirements show little change in tone, and in the market as a whole the buyers evidence very little interest.

Coke.—The activity incident to inquiries based on contracts for the last half of the year and also for the year to July, 1912, is not particularly great and the prospects are not particularly promising for an increase in interest immediately. The quotations being made now run from $2 to $2.50 per net ton at oven for 72-hour selected foundry, Connellsville or Stonega, but for prompt shipment prices have been made the past week from $1.90 to $2.25. A sale of about 1000 tons of 48-hour coke during the week was about the largest made. No contracts of importance have been reported as signed either for the last half or for the year to July, 1912.

Finished Iron and Steel.—During the past week the orders for structural steel have been better, as was anticipated last week, and buyers apparently have begun to feel that the market is really settled and that the present minimum basis will stand, of 1.35c. Pittsburgh. Included among the contracts of the week for structural steel was one of 600 tons for the Lemp Brewing Company, which went to the Spuck Iron & Foundry Company, a local concern. An order of about 950 tons for the new plant of the Fulton Iron Works is expected to go to Pittsburgh concerns with local representation, but the order has not been positively placed. Plates have been quiet, with some indications of an early movement, but nothing definite is expected under another week or so. The same has been the situation in bars, the difference in favor of iron continuing to affect orders in this branch of the business. In rails the largest transaction of the week was a sale of 29,000 tons of open hearth product to the Missouri Pacific, which brings the total so far for that road up to 55,000 tons, all for early delivery. A southeast Missouri line has been in the market with an inquiry for 1500 tons, but no order has been given. A north Missouri interurban line is under investigation by a London financial firm and it is understood that a favorable report is to be made which will bring this line into the market for a good tonnage within 60 days. The demand for light rails is very light, though there have been a few inquiries from mines, indicating that activity is reviving in that line. Track fastenings are in fair request at the same prices, which continue firm.

Old Material.—In scrap there seems to be no immediate likelihood of a change from the conditions which have maintained for some time. There is a continuance of the speculative transactions between dealers, but consumers are not prominently in the market. Their propositions are not interesting the dealers. If anything the market may be said to be weak, though the principal characteristic that can be given to it is that it is a waiting game all through. The Vandalia list, out since last report, carried about 300 tons. There has been no increase in the demand for steel. Dealers' prices per gross ton, f.o.b. St. Louis, are as follows:

Old iron rails	$12.50 to $13.00
Old steel rails, rerolling	11.25 to 11.75
Old steel rails, less than 3 ft	10.25 to 10.75
Relaying rails, standard section, subject to inspection	23.00 to 23.50
Old car wheels	12.00 to 12.50
Heavy melting steel scrap	10.25 to 10.75
Frogs, switches and guards cut apart	10.25 to 10.75
The following quotations are per net ton:	
Iron fish plates	$10.25 to $10.75
Iron car axles	17.50 to 18.00
Steel car axles	17.00 to 17.50
No. 1 railroad wrought	10.25 to 10.75
No. 2 railroad wrought	9.25 to 9.75
Railway springs	9.00 to 9.50
Locomotive tires, smooth	15.50 to 16.00
No. 1 dealers forge	8.50 to 9.00
Mixed borings	4.50 to 5.00
No. 1 busheling	8.50 to 9.00
No. 1 boilers cut to sheets and rings	7.25 to 7.75
No. 1 cast scrap	9.50 to 10.00
Stove plate and light cast scrap	8.00 to 8.50
Railroad malleable	8.00 to 8.50
Agricultural malleable	7.00 to 7.50
Pipes and flues	7.25 to 7.75
Railroad sheet and tank scrap	7.25 to 7.75
Railroad grate bars	7.50 to 8.00
Machine shop turnings	6.00 to 6.50

Buffalo

BUFFALO, N. Y., June 13, 1911.

Pig Iron.—No inquiries of importance have been reported for the week, but for small lots they have been quite numerous, especially from New England points, and a fairly good number of small orders have been booked in foundry grades. Shipments on old contracts are going forward in good volume and the rate of consumption is apparently well maintained. Prices are about the same as last week. Furnacemen are not inclined to make further concessions but some consumers are holding off hoping to obtain them. Offers from New York based on less than $13 at the furnace have been received but not entertained. The repairs to the break in the Erie Canal are expected to be completed this week and canal shipments resumed. This may stimulate placements in the Buffalo district from Eastern points and will at all events insure a greater movement in shipments on contracts

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to tidewater. We quote as follows for prompt and third quarter delivery f.o.b. Buffalo:

No. 1 X foundry	$14.00 to $14.50
No. 2 X foundry	13.75 to 14.00
No. 2 plain	13.50 to 13.75
No. 3 foundry	13.25 to 13.50
Gray forge	13.00 to 13.25
Malleable	13.75 to 14.25
Basic	14.00 to 14.75
Charcoal	16.50 to 17.25

Finished Iron and Steel.—A considerably better feeling appears to be present in the trade. Consumers are taking advantage of existing prices and are placing some good sized orders and a good number of miscellaneous contracts in bar material at the 1.25c. base price. Plates and shapes also show some improvement over last week. Prices are firm at 1.35c. In structural lines the outlook is very bright and many building projects of all descriptions are coming into the market or will soon be ready for figures. Canadian export trade is heavy in bar, plate and structural material. The leading interest reports having taken contracts aggregating over 8500 tons in bars, plates and shapes the past week. The same interest reports having closed several contracts running to 2000 tons to the domestic trade in the week. The 1700 tons of reinforcing concrete bar material required for the new warehouse for the Larkin Soap Company, Buffalo, was placed, 900 tons of soft bars with the Buffalo Corrugated Bar Company and 800 tons hard bars with the Franklin Steel Company, Franklin, Pa. Awards for the 3000 tons of structural steel for the same building (girders, columns and grillage) will be made this week on bids submitted last week. The Goulds Mfg. Company, Seneca Falls, N. Y., is taking bids this week for 350 tons of structural steel for the two additional factory buildings it is to erect. The Syracuse National Construction Company, Syracuse, N. Y., has received the contract for the structural steel work for the Rome Mfg. Company's addition to its plant at Rome, N. Y. Awards for the 570 tons of steel for Rand Hall, Cornell University, Ithaca, N. Y., are soon to be made.

Old Material.—No improvement has taken place in the scrap market. It is still dragging, consumers continuing to manifest a disposition to postpone purchases, waiting developments in the finished steel situation. Dealers are adding in a small way to their present stocks, but only when bargain prices are obtainable. The week's transactions have been very limited and hardly sufficient to establish a market, and there is no quotable change in prices. The schedule shown below is largely nominal. We quote per gross ton f.o.b. as follows:

Heavy melting steel	$11.50 to $12.00
Low phosphorus steel	14.00 to 14.50
No. 1 railroad wrought	13.25 to 13.50
No. 1 railroad and machinery scrap	12.75 to 13.25
Old steel axles	18.00 to 18.50
Old iron axles	22.00 to 22.50
Old car wheels	12.50 to 13.00
Railroad malleable	11.00 to 11.50
Boiler plate	9.50 to 10.00
Locomotive grate bars	10.00 to 10.25
Pipe	9.00 to 9.25
Wrought iron and soft steel twinings	6.25 to 6.75
Clean cast forgings	6.00 to 6.25

Birmingham

BIRMINGHAM, ALA., June 12, 1911.

Pig Iron.—About the only bullish item before the trade this week is the fact that the May shipments of pig iron from Alabama furnace yards practically equaled the make, there having been but a slight increase in stocks at the end of the month. Actual transactions were, if anything, lighter the past week than in any recent week. It seems that reducing the prices on finished products has had a tendency to still further delay any buying movement of pig iron. The market appears to be slightly weaker, and it is currently reported that such sales as have been made have been at $10.25 to $10.50, Birmingham base, for No. 2 foundry. A round lot of gray forge changed hands at just about $9, Birmingham. Quotations are continued on the same basis as last week, as follows, per ton of 2240 lb., f. o. b. cars at furnace, Birmingham district:

No. 1 foundry and No. 1 soft	$11.00
No. 2 foundry and No. 2 soft	10.50
No. 3 foundry	10.00
No. 4 foundry	9.75
Gray forge	9.50
Mottled	9.25
Standard basic, chill cast	10.50
"Off basic"	10.00
Charcoal carwheel iron	22.50

Cast Iron Pipe.—Shipments continue fairly satisfactory with Southern pipe makers. There is a large inquiry before the trade from Detroit, and the Southern producers are in high hopes of landing the order. It is reported that one foundry that has been idle thus far this year will likely change hands at an early date, with a view of its being put in operation. Quotations are nominally as follows, per net ton, f. o. b. cars here: 4 to 6 in., $22.50; 8 to 12 in., $22; over 12 in., $21, with $1 per ton extra for gas pipe.

Old Material.—There has been very little change in the scrap market recently. Actual consumers are loth to buy scrap iron unless there should be a decline in price in sympathy with the pig iron market, and in no case do buyers seem inclined to stock upon this line. Dealers' quotations are continued as follows, per gross ton, f. o. b. cars here:

Old iron axles (light)	$13.50 to $14.00
Old steel axles (light)	12.50 to 13.50
Old iron rails	12.50 to 13.00
No. 1 railroad wrought	11.00 to 11.50
No. 2 railroad wrought	9.50 to 10.00
No. 1 country wrought	7.50 to 8.00
No. 2 country wrought	7.00 to 7.50
No. 1 machinery	9.50 to 10.50
No. 1 steel	8.50 to 9.00
Tram car wheels	8.00 to 8.50
Standard car wheels	9.50 to 10.50
Light cast and stove plate	7.00 to 7.50

Coal and Coke.—The coke market has been affected somewhat by the entrance of one of the largest producers in the South that has for some time refrained from actively seeking foundry coke business. The result is that selected 72-hour, hand-picked foundry coke is offered now by Alabama ovens at slightly lower figures than have prevailed during the past twelve months. Virginia and West Virginia producers are still actively soliciting foundry coke orders throughout Alabama and other Southern States. There is an absolute lack of demand anywhere for furnace coke, as the furnaces now running are practically using only their own supply of raw material. The coal market generally continues very quiet, with low prices ruling, though some nice contracts are being closed up for the next twelve months.

San Francisco

SAN FRANCISCO, June 8, 1911.

No perceptible improvement is noted in the local distributing trade, and merchants do not look for any general activity in the near future. The market has been somewhat unsettled for the last week, as a result of recent developments in the primary markets, but the only actual change of any consequence in this territory is a reduction in sheets and oil-well supplies, the bar market standing as before. A good many small orders which have been withheld are now coming out, and in some departments recent bookings by mill representatives are larger than for some time. Many tentative inquiries of a more important nature are appearing, and while the larger buyers still maintain a conservative attitude, it is believed that any heavy movement in the East will be followed by the placing of large contracts for future delivery in this market. Local merchants are fairly well supplied for the present, but stocks elsewhere in the State are light, and there are indications of increasing requirements during the latter half of the year.

Bars.—The demand for soft steel bars is moderate, being about up to the average of the last several months. So far there has been little buying, except for immediate needs, though some buyers are expected to enter the market on a larger scale before long. No great amount of business is anticipated from dealers for some time to come, as the large supplies now on hand are decreasing but slowly. Reinforcing material is somewhat more active, a few orders having been placed recently which require a very fair tonnage. Plans are about complete for the resumption of local harbor improvements, which will require a large amount of reinforcing material. Bars from store, San Francisco, are quoted at 2c. for steel and 1.90c. for iron.

Structural Material.—The local building record for May showed a total valuation of $1,925,847, compared with $1,882,158 for April, and $2,447,079 for May, 1910. According to some fabricators, the situation is really better than these figures appear to indicate, though much of the new work is very small. A slight improvement is noted in the other leading cities of the coast, and the tonnage of fabricated material required in the smaller towns is steadily increasing. The most im-

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portant recent event in this line is the letting of the Oakland City Hall, requiring about 3500 tons, the contract for which was awarded to the Judson Mfg. Company, which has a large shop in Oakland. Dyer Bros., San Francisco, have taken a small job on a wing of the Polytechnic High School, and the Butler Building at Geary and Taylor streets, in addition to some unimportant work outside the city. The McClintic-Marshall Construction Company has taken a government job at Angel Island requiring 247 tons, and two 50-ton jobs, one at the Benicia Arsenal and one at Eureka, Cal. Bids have not yet been opened on the Southern Pacific station in Oakland. This company will soon be in the market for a large drawbridge at Los Angeles. An award on the Masonic Temple is expected June 10, and the Bankers' Hotel, requiring 400 tons, about the end of the month. The opening of bids on the Multnomah County Court House, Portland, Ore., has been postponed. Figures are to be taken next week on the Lally Plumbing Company's new building in this city, requiring about 400 tons. Figures will also be taken shortly on the Brown Building and the San Francisco Investment Corporation Building, each calling for about 300 tons. The California & Oregon Grain & Elevator Company is planning a large steel grain elevator near Los Angeles. Work will probably be resumed this summer on local harbor improvements, which will require a considerable tonnage of structural shapes.

Cast Iron Pipe.—The city of San Diego, Cal., has not yet placed its order, but has bids under consideration. Aside from this the situation is quiet. The tonnage taken on small orders by various gas corporations continues satisfactory, but at the moment there are no inquiries of unusual importance in the market.

Pig Iron.—No demand of any consequence exists for foundry iron. Business is limited almost entirely to very small transactions. No. 2 Southern foundry iron is nominally worth $21. Prices on English, Continental and Chinese foundry iron show considerable variation, ranging from $20 to about $23. Meyer, Wilson & Co. have chartered a vessel to carry 1000 tons of pig iron ballast from Belfast to Portland, Ore.

Old Material.—Aside from cast iron scrap, the market is featureless, the movement being of a limited nature. The Risdon Iron Works has placed on the market 1000 tons of heavy machinery cast scrap of exceptionally desirable quality. The lot was immediately taken by a few buyers at about $16.30 per net ton, at the Risdon works. Nothing of similar quality is to be had from dealers much below $18, though ordinary cast scrap is still quoted at about $16. A few small lots of rerolling rails and melting scrap are being sold, but the demand is limited. Prices are as follows: Steel melting scrap, per gross ton, $10.50 to $11; wrought scrap, per net ton, $11 to $15; rerolling rails, per net ton, $11.

Metals.—The city of San Francisco has placed an order with the Selby Smelting & Lead Company for 180 tons of pig lead.

New York

NEW YORK, June 14, 1911.

Pig Iron.—The daily run of business makes a fair volume. No large sales of foundry iron are reported, but consumers in this locality are purchasing small lots quite steadily. Those who buy round tonnages for future delivery have pretty generally covered their requirements running into the fall months, and some completely through the last half. Inquiries are coming in for delivery in the first half of next year, but furnacemen are not disposed to make quotations for such shipments, preferring to wait for developments. An encouraging feature of present conditions is that consumers are specifying to the full terms of their contracts and not asking for shipments to be held. Some of the Buffalo producers have advanced their quotations on foundry iron 25 cents per ton. The break in the Erie Canal has at last been repaired and through shipments of pig iron eastward are expected to be resumed speedily. Northern iron at tidewater is quoted as follows: No. 1 foundry, $15.50 to $15.75; No. 2 X, $15.25 to $15.50; No. 2 plain, $14.75 to $15. Southern No. 1 foundry is quoted at $15.25 to $15.75; No. 2, $14.75 to $15.25.

Cast Iron Pipe.—Newark, N. J., will open bids June 15 on 1200 tons of water pipe, and Yonkers, N. Y., June 19 on 450 tons. An eastern Pennsylvania foundry is stated to have secured the order from the contractor for furnishing 8900 tons of water pipe for the boroughs of Manhattan and the Bronx, naming a very low price, while it is reported that a southern New Jersey foundry secured the order for 1580 tons for the two other boroughs of the city of New York. Considerable inquiry has sprung up from the general trade within the last few days, and quite a sharp demand is reported by some makers for 4 to 8-in. Carload lots of 6-in. are quoted at $21 to $22 per ton, tidewater.

Old Material.—A sale of 2011 tons of Panama scrap at Philadelphia was made June 8 by the Panama Railroad in New York, the successful bidder being an eastern Pennsylvania interest at $10.67 per gross ton, f.o.b. cars, Philadelphia. The general demand is light, with probably a little more doing in cast scrap than any other class of old material. Some interest is shown by eastern Pennsylvania buyers in heavy melting steel scrap, but it must be of the choicest character to secure acceptance by the mills, as rejections continue, especially on deliveries made on contracts taken at higher figures than present prices. Practically no market exists for rerolling steel rails, and holders are either obliged to sell them for scrap or to store them to wait for a revival in the demand. Old car wheels are in almost no demand. Quotations are as follows, per gross ton, New York and vicinity:

Old girder and T rails for melting	$10.50 to $11.00
Heavy melting steel scrap	10.50 to 11.00
Relaying rails	20.00 to 21.00
Rerolling rails (nominal)	12.00 to 12.25
Standard hammered iron car axles (nominal)	22.00 to 22.50
Old steel car axles	16.75 to 17.25
No. 1 railroad wrought	13.00 to 13.50
Wrought iron track scrap	12.00 to 12.50
No. 1 yard wrought, long	11.50 to 12.00
No. 1 yard wrought, short	10.00 to 10.50
Light iron	4.25 to 4.75
Cast borings	5.25 to 5.75
Wrought turnings	6.25 to 6.75
Wrought pipe	9.50 to 10.00
Old car wheels	11.00 to 11.50
No. 1 heavy cast, broken up	11.00 to 11.50
Stove plate	8.50 to 9.00
Locomotive grate bars	8.50 to 9.00
Malleable cast	10.00 to 10.50

Finished Iron and Steel.—Dullness, with the likelihood of continued calm for at least two weeks, characterizes the market, though the under-current is stronger. Betterment in volume of business has been chiefly in steel bars. Bar iron is described as demoralized and, while it is known that bar iron has been sold at 1.25c. per lb. at New York, the prevailing prices, with emphasis on quality, are within the range quoted below. The conditions in structural steel lines are marred by general charges of low fabrication figures. Awards of the week covering large work do not exceed 10,000 tons for local territory. At this writing the 6000-ton Bamberger store building, Newark, N. J., is still in doubt, the 3000-ton Aeolian building in New York has not been settled, there is nothing to report on the 35,000-ton New York connecting railroad bridge and the bids for a 2000-ton highway bridge at McElhatan, Pa., have been rejected for a lower cost design. One large development in structural work is a 10,000-ton structure for railroad terminal in Kansas City, Mo. Among recent contract awards are the following: Richmond Hotel addition, Richmond, Va., about 400 tons, to Richmond Structural Steel Company; Norfolk terminal, 1200 tons, to Virginia Bridge & Iron Company, and the following to the American Bridge Company: Williamsburg bridge, towers and reinforcement, 2700 tons; bridges, Boston & Maine Railroad, 150 tons; Grand Central suburban area, New York Central Lines, 800 tons; Chestnut Street bridge, Philadelphia, 300 tons; Commercial National Bank Building, Charlotte, N. C., 750 tons; United States Rubber Building, 3700 tons; Scottish Rite Temple, Washington, D. C., 350 tons. The Bethlehem Steel Company will furnish part of the steel for the West Forty-second street warehouse to be erected by the Hinkle Iron Company and for the Jarmulowski building to be erected by the Radley Steel Construction Company. Quotations are: Plain structural material and plates, 1.51c. to 1.56c.; steel bars, 1.41c. to 1.46c.; bar iron, 1.30c. to 1.40c., all New York. Plain material and plates from store, New York, 1.80c. to 1.90c.

The coke production of the United States in 1910 exceeded that of any previous year, according to figures just issued by the United States Geological Survey. In 1910 the output was 41,631,410 net tons, valued at $99,696,267, while the production in 1909 was 39,315,065 net tons valued at $89,965,483.

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The German Iron Market

BERLIN, June 2, 1911.—Little change has taken place in the situation of the iron trade for a week past. The reports, however, are growing less favorable, and prices are everywhere weak where not rigidly fixed by trade combinations. The general feeling has grown less confident in view of the weakness of the American, English and Belgian markets. The disagreement among the American companies and the cut in steel prices have made a marked impression in Germany, and were used by stock market operators as one argument for selling German iron shares.

From Belgium again comes what has now grown to be the regular weekly announcement of lower prices. This time it is a cut of 2c. (to 117-119s.) a to nin plates of medium thicknesses, and 2s. 6d. (to 120-122s.) in thin plates for export, free on board at Antwerp. Owing to the weak tendency in the English market the price of English No. 3 foundry has this week fallen one to two marks a ton at Duisburg on the lower Rhine. In the Silesian district a movement among dealers favors reducing the price of bars and plates. From the Rhenish-Westphalian district, it is reported offers of steel bars as low as 97.50 marks are now in the market, while the export price, f.o.b. Antwerp, is barely 92 marks.

The band-iron trade is one of the weakest sections of the market. Only a limited number of mills are running on this specialty, of which 10 are in a combination and three are independent. Some of the big companies of the Steel Works Union in carrying out their general policy of extending their list of manufactures to the more finished products in order to consume as much as possible of their own steel have within a year or two begun to manufacture bands, and considerable price-cutting has resulted. After prices reached their high-water mark last August with 140-145 marks a downward movement began owing to the circumstances just mentioned, and now the combination is compelled to sell at less than 135 marks. It has recently appealed to the Union for better prices on steel material, but opposition has arisen from those works in the Union which are turning out bands. The state of business in this product has grown much less favorable. Some of the big companies are selling at heavily reduced prices for the fourth quarter of the year.

Wire Prices Unchanged

The wire combination voted several days ago to begin taking business for the September quarter at unchanged prices, namely, 14.75 to 15.25 marks for drawn wire and 16.50 to 16.75 marks for wire nails per metric cwt., according to the amounts ordered. Troubles exist in the organization, and it was decided at this meeting to dissolve it at the end of the month unless an adjustment of the disagreements be reached by June 15.

The heavy plate combination has also opened business for the next quarter at unchanged prices. Some of the mills running on this article are still well employed, particularly on ship plates; nevertheless, consumers are more reserved in placing new orders at existing prices. The foreign market is buying pretty well. In fine plates business is less satisfactory. The mills are only tolerably supplied with orders, and little new business is coming in. Prices have further weakened, having now touched 132.50 marks for thin numbers and 123 to 125 marks for medium. Export prices were forced down in May, in some grades as much as 5 marks a ton, under the influence of the break in Belgium, but considerable foreign buying has been going on at the lowered prices.

The Pig-Iron Market

Some of the reports still speak of a firmer tendency in the pig-iron market in connection with the prospect that the Essen Syndicate will be extended to cover the entire trade. No new progress in the negotiations can be reported, however. According to the latest information the outlook for getting the Lorraine-Luxemburg furnaces to join is far from encouraging for the syndicate. It is said that the companies there show little disposition to come in. Moreover, a serious disagreement already appears to have come up on the matter of allotments. The syndicate wants to make allotments to the various companies on the basis of their actual shipments in 1910, but they demand that their actual productive capacity be taken as the basis.

Foreign ores have latterly given way in prices a little. Shipments in May were heavy. At a meeting yesterday of the Ore Syndicate at Siegen it was stated that consumers had already ordered about all their requirements for the second half of the year. The managers expect a heavier demand for ores after the pig-iron interests have got together. To the report is added that the market position is little changed.

A report on conditions in French Lorraine shows the market still in a very strong position, presenting a marked contrast to nearly all other countries at this time. Manufacturers remain an optimistic attitude, and much expansion of plants is going on. Contracts expiring at the end of June have been renewed without the slightest difficulty at unchanged prices. An interesting German undertaking in another part of France is taking shape. The great coal and iron master Thyssen, of the lower Rhine, has for some time been exploiting ore properties in Normandy, shipping the ores to Germany by way of Rotterdam and the Rhine, but latterly he has decided to erect big iron works near Caen, including four blast furnaces, besides a steel plant.

The Laurahütte, the leading Silesian company, is about to begin the erection of a second big open-hearth plant, to replace a basic and bessemer plant. The new works will consist of five furnaces of the most modern type.

The fusion of the Burbach, Eich and Düdelingen concerns, which was referred to in this correspondence some weeks ago, has made further progress. At a meeting held in Brussels several days ago a basis for rating the value of the stock of the different companies was agreed upon, and it is expected now that the deal will go through without much delay. There is still an unsettled question as to the nationality of the new combination, as Burbach lies in Belgium, the other two concerns in Luxemburg. The new company will have an output of at least 1,000,000 tons of pig-iron yearly. The deal between Deutsch-Luxemburg and Rümelingen-St. Ingbert, also previously mentioned, is taking shape. A meeting of the latter company will be held shortly to act on the offer of Deutsch-Luxemburg, which is proposing to lease the Rümelingen-St. Ingbert business for a term of years, with dividend guarantee.

Metal Market

NEW YORK, June 14, 1911.

The Week's Prices

Cents Per Pound for Early Delivery.

	Copper, New York.			Lead		Spelter	
June	Lake.	Electrolytic	Tin. New York.	New York.	St. Louis.	New York.	St. Louis.
8	12.45	12.25	47.90	4.37½	4.22½	5.55	5.25
9	12.50	12.25	47.95	4.37½	4.22½	5.55	5.25
10	12.60	12.37½	.....	4.40	4.25	5.55	5.25
12	12.75	12.50	47.75	4.45	4.30	5.55	5.30
13	12.75	12.50	46.90	4.45	4.30	5.55	5.32½
14	12.75	12.50	46.87½	4.45	4.30	5.55	5.32½

All non-ferrous metals are higher but tin. The pig tin market here, however, is not following the London market so closely in its advances. Copper is much stronger. Lead and spelter are also commanding better prices.

Copper.—Heavy sales of both lake and electrolytic copper have tended to advance that market and business is so good that some of the leading sellers have retired pending a further readjustment in prices. Those who have copper to offer are in a comfortable position just now as the metal is not easy to secure for early delivery. The sharp advance is not entirely warranted by the sales, but has been influenced greatly through sentiment. Why there should be such a sudden change in sentiment regarding the copper situation is surprising to many, as the Copper Producers' report showing the May statistics was not considered so very encouraging. Electrolytic copper for early delivery could not be bought this morning for less than 12.50c. and lake sold for 12.75c. There were reports of higher prices being asked and a further advance would not surprise many. In London this morning spot copper was very firm at £56 10s. and futures, £57 1s. 3d. A reduction of ¼c. a pound has been made in prices on brass tubing, brass rods and brass and copper wire.

Waterbury Average.—The Waterbury average for May was 12.37½c. The average price of lake copper in New York was 12.32½c. and for electrolytic 12.12c.

Pig Tin.—While there is a good demand for pig tin, coming largely from buyers who have been scared into the market, the situation here is better than in

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London. This morning the American market was fully 3c. below the import parity. This was largely due to the fact that the leading consumer of pig tin entered the market during the week as a seller and broke what might have been a corner on spot supplies here. There was a great bulge in the London market on Friday and during the morning there was much excitement here. Some good sales were made and several 5-ton lots were disposed of at 50.75c. This is the highest price ever paid for pig tin in America. Fortunately, however, the efforts of people interested in the consumption of pig tin were brought to bear on the situation and before the afternoon was well begun the price broke and when the readjustment was made there were sales at as low as 47.95c. A confidential report to a New York house from its London connection states that plans have been made by the London syndicate to end the squeeze in pig tin there on June 20 and in consequence pig tin for delivery after that date is not being bought very heavily. This is given for what it is worth. It is highly probable that if the syndicate has laid such plans it will change them if the truth has leaked out. The future of the pig tin market here it is reasonable to suppose will be governed by the action of the leading consumer. In London this morning soft tin was selling for £230 and futures, £187 0s. 5d.

Tin Plates.—The domestic demand for tin plates is not heavy. The market is firm at $3.94 for 100 lb. coke plates. The price of foreign tin plates is unchanged at 13s. 9d. at Swansea, Wales.

Lead.—The lead market is materially stronger. This is not due to any great new demand but seems to be merely a result in the change of sentiment. Sellers do not seem to be particularly anxious to dispose of their holdings at existing prices and inquiries from buyers indicate that they are anticipating a rising market. This morning lead was up to 4.45c. in New York and 4.30c. St. Louis.

Spelter.—Spelter is in decidedly good demand. The galvanizing interests came into the market and bought heavily during the week with the result that prices have steadily advanced. There seems to be a better supply of spot spelter in New York and in consequence the premium demand is not so far above the St. Louis market as it has been. At present spelter in St. Louis is selling at 5.32½c. and in New York at 5.55c. The market is not very well organized and some sales have been made at slightly under these prices.

Antimony.—The antimony situation is unchanged excepting that the trade is wondering about what has become of the syndicate which seems to be making no attempt to regain control. Prices are weak with Hallett's at 8.75c. and Cookson's at 9c. Hungarian grades can be had at around 7.50c.

Old Metals.—Conditions are better and prices are firmer. While dealers' selling prices, New York, are unchanged, as follows, the outside quotation is now more in evidence:

	Cents.
Copper, heavy cut and crucible	11.75 to 12.00
Copper, heavy and wire	11.25 to 11.50
Copper, light and bottoms	10.50 to 10.75
Brass, heavy	7.75 to 8.00
Brass, light	6.50 to 6.75
Heavy machine composition	10.25 to 10.50
Composition turnings	8.50 to 8.75
Clean brass turnings	7.75 to 8.00
Lead, heavy	4.20 to 4.25
Lead, tea	3.95 to 4.00
Zinc scrap	4.25 to 4.30

Chicago

June 13.—The rapid rise in the price of tin has limited the buying of this metal to absolute needs and the transactions recorded have been few and small. A fairly active week is reported in copper sales, but other metals have moved slowly. We quote Chicago prices as follows: Casting copper 12.50c.; lake, 12.75c., in carloads, for prompt shipment; small lots, ¼c. to ⅜c. higher; pig tin, carloads, 49c.; small lots, 50½c.; lead, desilverized, 4.35c. to 4.40c. for 50-ton lots; corroding, 4.60c. to 4.65c. for 50-ton lots; in carloads, 2½c. per 100 lb. higher; spelter, 5.35c. to 5.40c.; Cookson's antimony, 10c., and other grades, 8¾c. to 9¾c., in small lots; sheet zinc is $7.25 f.o.b. La Salle, in carloads of 600-lb. casks. On old metals we quote for less than carload lots: Copper wire, crucible shapes, 12½c.; copper bottoms, 10¼c.; copper clips, 12c.; red brass, 10½c.; yellow brass, 9¼c.; lead pipe, 4⅜c.; zinc, 4¼c.; pewter, No. 1, 27c.; tin foil, 35c.; block tin pipe, 39c.

St. Louis

June 12.—The metal market here is very quiet and such changes as appear in the quotations are the result of manipulations elsewhere and not due to local conditions. This is especially true of tin, which is quoted at 48.85c. as against 47c. at the last report. Lake copper stands at 12.85c., at which it was last quoted here. Electrolytic is at the same figure, also having shown no change during the past week. The quotation on antimony is 9.35c., which is a fall from 9.85c. a week ago. On lead the figure is 4.22½c. or unchanged. Spelter stands at 5.22½c. to 5.25c., a slight advance over a week ago. In old metals the quotations are: Light brass, 5c.; heavy brass and light copper, 8c.; heavy copper and copper wire, 9c.; zinc, 3c.; lead, 3.25c.; pewter, 20c.; tinfoil, 28c.; tea lead, 8c.

Iron and Industrial Stocks

New York, June 14, 1911.

Prices of securities have maintained their strength consistently since last week's report and further advances have been made in some stocks. The range of prices on active iron and industrial stocks from Wednesday of last week to Tuesday of this week was as follows:

Allis-Chalmrs., com..	8⅛- 9¼	Pressed St., pref....	100⅞-101
Allis-Chalmrs., pref..	31⅝- 33	Railway Spgs., com.	37 - 38
Beth. Steel, com....	32¾- 34½	Republic, com.....	30 - 30½
Beth. Steel, pref.....	63⅜	Republic, pref.....	94½- 95¼
Can, com.....	11⅜- 12	Sloss, com.....	50 - 50¾
Can, pref.....	86⅝- 87⅝	Sloss, pref.....	110
Car & Fdry., com...	56 - 57	Pipe, pref.....	58½- 59¾
Car & Fdry., pref.....	118	U. S. Steel, com...	76¾- 78½
Steel Foundries.....	42 - 42½	U. S. Steel, pref...	117⅞-118⅜
Colorado Fuel.....	34⅜- 35¼	Westinghouse Elec..	75 - 77½
General Electric.....	163 -164⅞	Va. I. C. & Co.....	69 - 71
Gr. N. ore cert.....	62¼- 63¼	Am. Ship, com.....	72½
Int. Harv., com....	122¾-125	Chi. Pneu. Tool....	51 - 52¼
Int-Harv., pref.....	124 -124⅞	Cambria Steel.....	44½- 45
Int. Pump, com.....	41¼- 42¾	Lake Sup. Corp.....	27¼- 28½
Int. Pump, pref....	89 - 90½	Pa. Steel, pref.....	105 -106½
Locomotive, com....	41 - 42	Warwick	10
Locomotive, pref.....	109½	Crucible St., com...	12 - 13½
Nat. En. & St., com.	17 - 17¾	Crucible St., pref...	83 - 83⅞
Pittsburgh St., pref.	105¾-106¼	Harb. Walk Ref., com....	45

Dividends Declared

The Lanston Monotype Company, regular quarterly dividend of 1½ per cent., payable June 30.

The American Smelting & Refining Company, regular quarterly dividend of 1¾ per cent. on the preferred and 1 per cent. on the common stock, payable July 1.

The Rubber Goods Mfg. Company, regular quarterly dividend of 1¾ per cent. on the preferred and 1 per cent. on the common stock, payable June 15.

The American Pipe & Construction Company, regular quarterly dividend of 2 per cent., payable July 1.

The Canadian General Electric Company, Limited, quarterly dividend of 1¾ per cent. on the common stock, payable July 1.

The International Silver Company, regular dividend of 1¾ per cent. and ¼ per cent. extra, payable July 1.

The Buffalo General Electric Company, quarterly dividend of 1½ per cent., payable June 30.

The La Belle Iron Works, quarterly dividend of 2½ per cent.

The Youngstown Sheet & Tube Company, quarterly dividend of 2½ per cent.

The American Iron & Steel Mfg. Company, quarterly dividend of 1¼ per cent. on the common and of 1¼ per cent. on the preferred, payable July 1.

The International Harvester Company, regular quarterly dividend on the common stock of 1¼ per cent., payable July 15.

The Consolidated Car Heating Company, regular annual dividend of 2 per cent., payable July 15 and 2 per cent., payable January 15 next, and an extra dividend of 2 per cent., payable July 15.

In the suit of the Vulcan Detinning Company against the American Can Company and Frank A. Assman, for an accounting of the profits made by the American Can Company in connection with the detinning of scrap at Paulsboro, N. J., and Joliet, Ill., the master in chancery at Trenton, N. J., has decided that the defendant must account to the Vulcan Company for profits of $677,352. The case will probably be appealed. The contention is that the can company unlawfully used the Vulcan process of detinning.

The Westinghouse Electric Annual Report

The report of the Westinghouse Electric & Mfg. Company and its subsidiaries for the year ended March 31, 1911, records the largest year's business in both gross earnings and net income in the company's history. The gross earnings were $38,119,312 and the cost $32,510,547, leaving a net manufacturing profit of $5,608,765. Other income was $1,515,532, and deductions for interest, depreciation of plant, etc., were $2,243,191, making the year's surplus $4,881,106. The gross earnings exceed those of the preceding fiscal year by $8,870,630, and were greater by $5,093,072 than those of the best previous year in the company's history. Dividends were paid totaling $629,795, including 7 per cent. on the preferred stock and a balance of 8¾ per cent. accumulated unpaid in recent years.

The report states, however, that the business taken by the company in the last two months of the fiscal year, and since its close, compares unfavorably with the same months in 1910. Unfilled orders March 31 totaled $7,616,058, as against $11,256,196 on the same date last year. The agreement between the company and the General Electric Company, made March 31, 1896, whereby for a period of 15 years each company licensed the other under the patents controlled by it, with provision for the payment of royalties, will not be renewed. Other patent license agreements with manufacturers of mining locomotives, small motors, fuses, switches and sockets, under which the company has been working for some years, have recently been canceled on the suggestion that they might be questioned as being in violation of the federal anti-trust laws, notwithstanding they were originally made and have been maintained under advice of counsel that assured the company of their validity.

For the first time the company makes public the financial conditions of the foreign companies established by the parent corporation. Their history has been one of losses and the writing off of large percentages of their book values. First to be established was the Westinghouse Electric Company, Ltd., a British corporation organized in 1889. The income of this company has long been insufficient to pay the expenses of its operation and the upkeep of its patents. In the fiscal year ending in 1910, the directors wrote off from the book value $773,084, and in the fiscal year just ended $500,000 more, leaving it at $500,000. Still further depreciation must be contemplated. The British Westinghouse Electric & Mfg. Company, Ltd., organized in 1899, owns large manufacturing works in Manchester, England. Its operations have been almost uniformly unprofitable, although recent improvement indicates that it will be able to meet its fixed charges.

The Société Anonyme Westinghouse of Paris, organized in 1901, operates factories at Havre and Freinville, and its territory includes France, Belgium, Holland, Switzerland, Spain and Portugal. Its operations have been steadily unprofitable. The Societa Italiana Westinghouse was formed primarily to execute important contracts for electrifying the Italian State Railways, a project that has been deferred by the Government. While the parent company holds none of its stock, $289,746 has been advanced for which stock will be received later. The Italian company showed a loss last year of $32,940. The Russian company was organized in 1906 to execute a contract for the electrification of the St. Petersburg street railroads, which resulted in a loss of more than $1,000,000 and other losses aggregate $800,000. The Austrian company, organized in 1906 to manufacture tungsten lamps, has been measurably profitable. On the Westinghouse Metal Filament Lamp Company, Ltd., London, organized at the same time to control the patents covering the manufacture of tungsten lamps for territory outside of Austria, the book value of the investment will probably be realized. The company's holdings of the stock of the Canadian Westinghouse Company, Ltd., are worth more than their book value, and the company's stock in several power companies is considered worth practically its book value.

The Thomas W. Pangborn Company, Jersey City, N. J., announces that it has consolidated the executive, sales, accounting and purchasing divisions of the business, formerly located at 90 West street, New York City, at the Jersey City plant, Hudson and Morris streets, where are the manufacturing and engineering divisions and the show rooms. The improved transit facilities have made this change desirable.

The World's Railroad Mileage in 1909

The Archiv für Eisenbahnwesen has brought down its census of the railroads of the world through the year 1909. At that time the whole world had 625,698 miles, exclusive of street railroads, trolley lines and other light structures. For the grand divisions of the Old and New World the mileage is:

	Miles.		Miles.
Europe	204,904	North America	277,015
Asia	61,800	South America	42,329
Africa	20,809	Australasia	18,849
Old World	287,513	New World	338,185

Thus the new world has 54 per cent. of the total. North America alone has 10,000 miles more than Europe and Asia together, although the latter have 1,250,000,0000 inhabitants as against 115,000,000 in North America. More than half of the railroads of the world have been built since 1886, the average being 13,600 miles per year. In 1909 more railroad was constructed in Asia than in Europe, and in the four years preceding nearly as much. Russia was the leader in the 1909 construction, opening a line 1258 miles long in Central Asia. China in that year had 5277 miles, of which 3050 miles were built in the past four years. In Africa a notable activity exists, chiefly in the British South African Union, which has now more railroads than any other two countries in Africa. A number of lines have been built from the coast inland by the German, French and Portuguese, as well as by the English, through districts which have little white population.

Promising Crop Conditions

The indicated yield of wheat, based on the Government crop report for June 1, is the largest on record, although that of winter and spring wheat separately is not. The condition of winter wheat is 80.4 per cent., which gives a total of 479,915,000 bu.; for spring wheat the condition is 94.6, and an indicated yield of 284,571,000 bu., making the total 764,286,000 bu. With oats the condition is 85.7 per cent., an indicated yield of 976,425,000 bu.; rye, 88.6 per cent., or 34,422,000 bu.; barley, 90.2, or 175,246,000 bu.

The Wisconsin Steel Company, Iroquois Iron Company and Inland Steel Company, all of them Illinois corporations, and the Coke Producers' Association of Connellsville, Pa., have secured from the Interstate Commerce Commission a suspension for four months of a proposed advance in freight rates on coke. The advance was to become effective June 15, raising the Chicago rate from $2.35 to $2.50 per ton.

President C. A. Adams of the Cleveland Chamber of Commerce, Cleveland, Ohio, has appointed a new committee on industrial development, which will gather data regarding the industries of the city and determine new industries that are needed. The work of the committee in the past year brought some new manufacturing plants to the city. D. T. Croxton, president of the Cleveland Furnace Company, was reappointed chairman of the committee.

The Trenton School of Industrial Arts has dedicated a new building, which was erected by Henry C. Kelsey, former secretary of state of New Jersey, at a cost of $140,000.

The recent visit of the American Trade Delegation to China resulted in a proposition to establish an American-Chinese Bank at Shanghai, to be conducted by a directorate composed equally of Chinese and Americans, but with a Chinese chairman. The proposed capital is $5,000,000, United States gold, subscribed half in China and half in the United States. One result of such a bank would be to simplify the matter of credits in dealings between American exporters and the Orient.

Plans are being made by the Northern Iron Company to blow in its Standish furnace, at Standish, N. Y., before the end of the month.

The Administration and the Steel Corporation

The Washington correspondent of the New York Journal of Commerce states that the first instalment of the report of the Bureau of Corporations on the steel industry will deal largely with the financial side of the United States Steel Corporation's organization and the reasons for creating that corporation. This will be followed by an exhaustive financial history of the corporation from its founding down to the present time, accompanied by a discussion of the stock market operations that have been incidental to the progress of the concern. It has not been decided how many sections will be issued in giving out the steel report, but probably not less than three or four. This will give the financial side of the subject ample opportunity to be studied, and to receive such notice as the public is willing to give it. The correspondent continues:

"Republicans believe that as soon as the bureau report is issued the interest of the public in the doings of the Stanley steel investigating committee will evaporate. The details of the steel business that have been gathered by the bureau are so much more complete and so nearly exhaustive that there will be nothing left for the committee to do except to cover the same old grounds, just as it has been doing up to date, but there will be a difference in this respect—the subject will then have been thoroughly exhausted and there will be little or no possibility, it is believed, of focusing public attention any further upon the matter.

"Careful inquiry does not disclose any foundation whatever for the statement that the government has determined to start a suit against the steel combination. The subject has been under advisement for a long time past, but owing to the failure of the Bureau of Corporations to finish its report, and owing to the inertia of the administration nothing so far as can be learned has been settled upon. If a suit is started it will be done in part as a result of the attempt of the Democrats to make political capital out of conditions here. But some of the men who are closest to the matter state emphatically that not only had there been no determination to open such a prosecution, but that they themselves doubt extremely the political wisdom of such an undertaking at the present time."

Efficiency of Coney Island Fire Pumps

A number of articles were published in the daily press of New York City, May 29 and 30, on the subject of the disastrous fire at Dreamland, Coney Island, directing considerable criticism against the operation of the pumps in the high pressure service pumping station at Coney Island, the information being received apparently from Fire Chief Lally of Brooklyn. The Goulds Mfg. Company, the builder of the pumps, has gone to considerable trouble to ascertain that it was through no fault of the pumps that the pressure was not maintained. The trouble was due to the fact that more water was demanded by the fire department than the pumping station was designed for.

Vice-president W. E. Dickey, of the Goulds Company, has given out some correspondence which he has had with Commissioner Henry S. Thompson of the Department of Water Supply, Gas and Electricity, New York, regarding these complaints. The letters include one from J. W. F. Bennett, deputy Commissioner, in which he says: "In reply to your communication to Commissioner Henry S. Thompson, I have pleasure in stating that the three high pressure fire service gas engine driven pumps at the Coney Island station worked satisfactorily during the Dreamland fire. The overdraft on the pump necessarily resulted in the reduction in pressure shown on the charts and mentioned in the press."

The daily papers publish a prospective consolidation of a number of cast iron pipe foundries, the names of the companies mentioned being the Massillon Iron & Steel Company, Massillon, Ohio; Glamorgan Pipe Company, Lynchburg, Va.; Lynchburg Foundry Company, Lynchburg, Va.; Dimmick Pipe Company, Birmingham, Ala. It appears to be correct that a meeting was held in Philadelphia last week at which a plan of this kind was discussed, but it resulted in nothing definite. From expressions received from some of the parties presumed to be interested, the prospects of the consolidation appear rather remote.

May Copper Production and Stocks

The Copper Producers' Association has issued its monthly statement for May, as follows:

	Pounds.
Stock of marketable copper of all kinds on hand at all points in the United States, May 1	165,555,908
Production of marketable copper in the United States from all domestic and foreign sources during May	126,962,544
Deliveries of marketable copper during May:	
For domestic consumption	64,543,963
For export	61,978,557
Total	126,522,520
Stock of marketable copper of all kinds on hand at all points in the United States, June 1	165,995,932

The statement shows an increase in stocks from May 1 to June 1 of only 440,024 lbs. The month's production showed an increase over April of 8,877,321 lbs.

The Pittsburgh Foundrymen's Association

The annual meeting of the Pittsburgh Foundrymen's Association was held in Pittsburgh last week, at which new officers for the ensuing year were elected as follows: W. A. Bole, Westinghouse Electric & Mfg. Company, Wilmerding, Pa., president; Eliot A. Kebler, Pittsburgh representative of M. A. Hanna & Co., vice-president; John McLauren, re-elected treasurer, and F. H. Zimmers, re-elected secretary, the latter having held his position for 15 years. An executive committee was also elected consisting of J. S. Seaman, Henry R. Spilker, C. W. Jones, E. D. Frohman and J. S. McCormick.

The report of the treasurer showed a balance on hand of $922.27, as compared with $667.53 a year ago. The report of Secretary Zimmers showed a total of 148 active and five honorary members, as compared with 127 active and four honorary members on June 1, 1910. A letter was read from Dr. Richard Moldenke, secretary of the American Foundrymen's Association, expressing thanks and appreciation for the work of the Pittsburgh foundrymen in connection with the recent annual convention of the American Foundrymen's Association.

The new No. 4 blast furnace of the Republic Iron & Steel Company at Haselton, Ohio, was blown in June 8. It is 85 ft. high and 22 ft. 6 in. in diameter at the bosh and will make about 500 tons of Bessemer pig iron per day. This company also started up on June 12 four of the eight open-hearth furnaces in its new steel plant, and expects to start up the other four within a short time or as soon as business conditions improve.

The Wheeling Mold & Foundry Company, Wheeling, W. Va., has put in operation its new 30-ton open-hearth furnace and the new erecting department in its machine shop.

The Kurtz Brass Bed Company, Corry, Pa., is having plans and specifications made by a local architect for a new plant. Bids will shortly be asked for the building of the new factory.

The Pittsburgh office of the Wisconsin Engine Company has received an order from the Philadelphia Company, Pittsburgh, for a 1200-hp. cross-compound pumping engine with gas cylinder 20 in., low pressure 48 in. and stroke 60 in., to be delivered at one of its West Virginia stations this month.

The new office building of the Republic Iron & Steel Company at Youngstown, Ohio, is nearly completed and will be occupied about July 15. A special train will be used to transfer to the new building the books and other records of the company from its present general offices in the Oliver Building, Pittsburgh.

An International Shipping and Oil Engine Exhibition will be held at Newcastle-on-Tyne, England, in November.

The large new buildings of the Willys Overland Company at Toledo, Ohio, will be conspicuous as embodying the modern substantial type of concrete construction, with large daylight openings of Detroit Fenestra solid steel windows throughout.

The Future in Blowing Engine Practice

An air reservoir for the furnace blast is recommended by Prof. C. L. W. Trinks, of the Carnegie Technical Schools, Pittsburgh, to prevent the discharge from the blowing engines setting up vibrations which may be transmitted through the whole system. This point is mentioned in a paper he read before the American Society of Mechanical Engineers at Pittsburgh. The separator has been used with the steam engine for a similar reason, but resistance is offered if the suggestion is made to the blast furnace man.

Incidentally Professor Trinks's paper is a strong argument for more attention to the production of high speed blowing engines, and as stated in the brief review of the paper given in *The Iron Age* of June 8, he regards the combination of the high speed reciprocating blower with the blast furnace gas engine as easily profitable even in the Pittsburgh district, where coal is cheap. He considers that a gas-driven blowing engine with 800 to 900 ft. per minute piston speed and high rotative speed will be the most formidable competitor of the turbo-blower, if European experience may be taken as a guide. There are engineers in this country who have already carried into practice higher piston speed for gas engines for electric power, and interesting developments in this line of work may be expected in the next five years.

The paper, in an extended study of types of valves and valve gear for blowing engines, concludes that the low-lift alloy-steel plate valve promises to become the standard for high-speed engines. It refers also to the use in Europe of large tanks resting on the air cylinders for taking the air before it is sent on through the air-pipe lines.

The Steel Corporation's Unfilled Orders

The monthly report of the United States Steel Corporation on the amount of unfilled orders on its books, issued June 10, showed that on May 31 orders amounting to 3,113,187 tons, a decline from April 30 of 105,517 tons. This was the second monthly decline in unfilled orders during 1911, and brought the total to the smallest figure since January. New orders received in May slightly exceeded those received in April but shipments were larger.

The following table gives the unfilled tonnage of the United States Steel Corporation by months since June 30, 1910, together with tonnage at close of each quarter from December 31, 1902, to June 30, 1910:

May 31, 1911	3,113,187	Dec. 31, 1907	4,624,552
April 30, 1911	3,218,704	Sept. 30, 1907	6,425,008
Mar. 31, 1911	3,447,301	June 30, 1907	7,603,878
Feb. 28, 1911	3,400,543	Mar. 31, 1907	8,043,858
Jan. 31, 1911	3,110,919	Dec. 31, 1906	8,489,719
Dec. 31, 1910	2,674,757	Sept. 30, 1906	7,936,884
Nov. 30, 1910	2,760,413	June 30, 1906	6,809,859
Oct. 31, 1910	2,871,949	Mar. 31, 1906	7,018,712
Sept. 30, 1910	3,158,106	Dec. 31, 1905	7,605,086
Aug. 31, 1910	3,537,128	Sept. 30, 1905	5,865,377
July 31, 1910	3,970,931	June 30, 1905	4,829,655
June 30, 1910	4,257,794	Mar. 31, 1905	5,579,560
Mar. 31, 1910	5,402,514	Dec. 31, 1904	4,696,203
Dec. 31, 1909	5,927,031	Sept. 30, 1904	3,027,436
Sept. 30, 1909	4,796,833	June 30, 1904	3,192,277
June 30, 1909	4,057,939	Mar. 31, 1904	4,136,961
Mar. 31, 1909	3,542,595	Dec. 31, 1903	3,215,123
Dec. 31, 1908	3,603,527	Sept. 30, 1903	3,278,742
Sept. 30, 1908	3,421,977	June 30, 1903	4,666,578
June 30, 1908	3,313,876	Mar. 31, 1903	5,410,719
Mar. 31, 1908	3,765,343	Dec. 31, 1902	5,347,523

Labor Troubles at the Baldwin Works

Labor difficulties at the plant of the Baldwin Locomotive Works, Philadelphia, have interfered to a considerable extent with the company's operations, both in Philadelphia and at Eddystone, Pa. Until a few years ago its mechanics were not organized and little difficulty was experienced between the company and its employees. In the past year, however, unrest on the part of some of its organized employees has been noticeable, culminating last week, when a strike, which is variously estimated to number from 5000 to 7000 employees, was called.

Several weeks ago the Baldwin Works, according to a prearranged policy, due to inactive conditions of business, laid off about 1200 employees, and the union men declare they were discriminated against. Minor troubles, however, were said to have been the direct cause of the men going on strike. Officials of the company refuse to discuss the matter in any way, but it is believed from information obtainable that the present strike will be fought out with a view of determining whether or not the plant is to continue to be operated as an open shop. Meanwhile the plant is being kept in partial operation, which it is said is not particularly inconvenient to the company, as but few orders for urgent delivery are on its books. No disorder has, so far, attended the strike.

The J. B. & J. M. Cornell Company's Assets Sold.—Judge Holt, in the United States District Court, gave his formal approval June 10 to the bid of the New York Trust Company and Sarah Cornell for the assets of the J. B. & J. M. Cornell Company. The bid is $198,825, and succeeds over the bid of $129,250, made by bondholders, in connection with a plan for the cancellation of outstanding bonds aggregating $630,000. Judge Holt directs the cancellation of receivers' certificates held by the New York Trust Company and Sarah Cornell, and directs the receivers to turn the property over to the bidders, free and clear. Judge Holt's order also provides for the retirement of the bonds, and retains jurisdiction over the property for the time being to insure compliance with the court's decree.

The Fort Wayne Electric Works, Fort Wayne, Ind., was merged June 1 with the General Electric Company, Schenectady, N. Y., and its business is now being conducted under the name of the Fort Wayne Electric Works of General Electric Company. The same lines of apparatus and supplies will continue to be manufactured and sold under the immediate direction of the same individuals as heretofore, with F. S. Hunting in responsible charge as general manager. All outstanding contracts and other obligations of the Fort Wayne Electric Works will be carried out by the new organization and all correspondence should be sent to it at the same addresses as in the past.

The Jeffrey Mfg. Company, Columbus, Ohio, has taken a contract from the Stark-Hocking Coal Company for a complete coal-crushing and washing plant and has recently completed or has under way considerable similar work for other coal-mining companies.

The Colonial Steel Company, Pittsburgh, Pa., announces the opening of its new works warehouse. The building embodies the latest ideas in warehouse construction and is one of the most modern tool steel warehouses in the country. Large stocks are carried for immediate shipment in standard sizes of the following brands of steel: Colonial high speed, Colonial No. 7 tool, Colonial special tool, Red Star tool, Colonial drill rod, Crown machinery.

It is announced that the Central Ohio Power Company, which is to be incorporated with a probable capital of $7,500,000, will build a large electric power plant at Beaumont, near Athens, Ohio. The company expects to supply power to a number of cities, manufacturing plants and traction lines. An initial expenditure of $3,500,000 is planned for the plant, transmission lines, reduction stations, etc. The first installation will consist of three 3000-kw. steam turbines. J. J. Henry, Denver, Col., is in charge of the installation of the plant. C. W. Humphreys, Chicago, Ill., has prepared plans.

The LaBelle Iron Works, Steubenville, Ohio, has installed a new dipping plant for the coating of iron pipe with Rexaco pipe dip. The object of the treatment is to prevent corrosion of pipe laid in soil in which either acid or alkaline conditions exist. It is claimed to be an effective insulation against electrolytic action.

The Antrim Iron Company, Grand Rapids, Mich., owner of the Antrim furnace at Mancelona, Mich., has acquired by purchase the plant of the Antrim Chemical Company located at the same place.

Greenlee Bros. & Co., Rockford, Ill., manufacturers of woodworking machinery and tools, will maintain a branch Chicago office in charge of James A. Lounsbury, vice-president, at 847 Marquette Building.

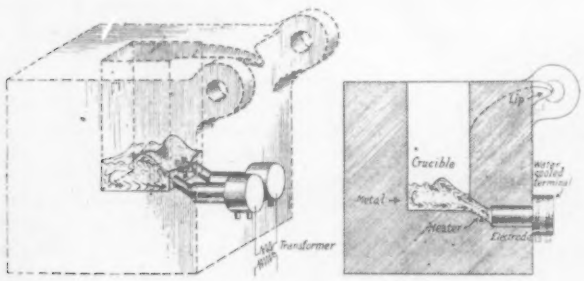
The Philadelphia Foundrymen's Association

Carl Hering Describes His New Electric Furnace

The monthly meeting of the Philadelphia Foundrymen's Association, the last before the summer vacation, was held at the Manufacturers' Club the evening of June 7, with President Thomas Devlin in the chair. The treasurer, Josiah Thompson, made a statement regarding the association's finances, which are in excellent shape, with a substantial balance and all bills paid. Howard Evans, representing the committee in charge of the association's special trip to the Pittsburgh convention of the American Foundrymen's Association, reported as to the trip and features of the convention. Those participating in the trip included the following:

W. S. Bickley, Penn Steel Casting & Mach. Company, Chester, Pa.
W. J. Shennan Bethlehem Steel Company, Bethlehem, Pa.
W. I. Crubb, John Wiegner, Light Mfg. Company, Pottstown, Pa.
Frank Francis, Chester Steel Casting Co., Chester, Pa.
Arthur Smith, A. D. Ineson, Ingersoll-Rand D. Company, Easton, Pa.
L. J. Krom, Palmer M. Langdon, Metal Industry, New York.
John Purcell, Baldwin Locomotive Works, Eddystone, Pa.
E. W. Word, The Foundry, Cleveland, Ohio.
Conn. Gorman, Maryland Steel Works, Sparrows Point, Md.
Richard T. Thum, Girard Iron Works, Philadelphia.
Thomas Devlin, Thomas Devlin Mfg. Company, Philadelphia.
Howard Evans, J. W. Paxson Company, Philadelphia.
Geo. C. Davis, Chemist, Philadelphia.,
C. F. Grimes, Standard Roller Bearing Company, Philadelphia.
W. W. Parry, American Pattern Company, Philadelphia.
E. M. Taggart, J. W. Paxson Company, Philadelphia.
John Alexander, Harrison Safety B. Works, Philadelphia.
J. I. Fasey, Philadelphia Chaplet Company, Philadelphia.
Wm. E. Ertle, Henry Huder, Schaum & Uhlinger Company, Philadelphia.

Brief responses referring to the exhibits and the papers discussed at the convention were made by W. B. Robinson, John Alexander, F. Francis and Howard Evans. The evening's discussion was on "electric furnaces, their advantages, disadvantages and limitations, compared with the types of melting furnaces now used in foundry practice," with a paper by Carl Hering, consulting engineer, Philadelphia, Pa. Mr. Hering introduced his subject by making comparisons between electric and the usual type of combustion furnaces used in metallurgical practice, and their respective limitations as heat producers. He showed, by means of lantern slides, many types of electric furnaces and explained in detail their construction and the difference between those of the resistance and direct arc types. At a moderate temperature the cost of operation of the ordinary combustion furnace was, he said, probably lower than that of the electric furnace, but the cost of operation in the former practice increases rapidly as the temperature rises and soon reaches its limitations. Different types of electric furnaces also have limitations, due to various phenomena developed in the character of work to be performed. In certain resistance furnaces the pinch phenomena limits their adaptability in some cases. In connection with arc furnaces considerable attention was given to the question of electrodes and their composition.



The Hering Electric Furnace.

The speaker referred in particular to a new type of furnace, developed by himself and now practically past the experimental stage, inasmuch as a Hering furnace for commercial practice is under construction. It is of the arc type, as shown in the accompanying illustration. Briefly, the crucible is of clay carried in a frame, which can be made to revolve on trunnions, the pouring lip being at the center of the hinge line to facilitate pouring. The electrodes, which may be of iron, steel or copper, according to the work to be performed, enter at the base of the crucible, the current entering one pole and leaving by the other. By this application of the electrodes a phenomena, which Mr. Hering describes as the "squirt phenomena," is produced. The metal is violently agitated and boils or squirts up over each pole, producing a circulation down from the sides to the poles and then upward through the middle of the bath. The terminals of the electrodes are water cooled, which prevents their melting beyond a certain point, and also obviates any leakage of the metal around them. Either direct or alternating current may be used, preferably the latter, as the necessary transformer can be directly attached to the furnace body. The addition of a third pole and the use of a three-phase current, is also permissible.

Considerable discussion followed regarding the economy and advantages of this furnace, but Mr. Hering was not prepared to furnish statistics regarding the cost of operation. Following the meeting a buffet luncheon was served.

The Knox Pressed & Welded Steel Company.—This company, recently incorporated in Ohio with a capital stock of $125,000, has purchased the property of the Niles Boiler Works, Niles, Ohio. The site contains three acres, having connections with the Pittsburgh & Lake Erie, Baltimore & Ohio and Pennsylvania railroad, and has five buildings on it, which house a well-equippped boiler shop, an oxy-acetylene welding plant, hydraulic pressing and flanging department, power plant, machine shop, etc. The purchase was made primarily to manufacture the Knox patented water-cooled ports, doors and frames for open-hearth furnaces, but other products will be annealing boxes, galvanizing pots, steel plate construction, ladles and pressed, welded and flanged work. An additional hydraulic press and other equipment will be installed. Sales will be handled from Niles, Ohio. William H. Schoen is president; L. L. Knox, vice-president; Irvin F. Lehman, treasurer, and G. W. Gerwig, secretary, all of Pittsburgh.

Industrial Works Catalogue.—A new general catalogue has been issued by the Industrial Works, Bay City, Mich., covering railroad and commercial cranes, pile drivers and railroad equipments. The catalogue, which is known as No. 104, measures 9 x 12 in., and is profusely illustrated with engravings of the different types of wrecking, locomotive, construction, pillar and hand power cranes, pile drivers and transfer tables. The views show the apparatus in action and brief descriptions are given on the pages facing the engravings.

Oriskany Iron Property Changes.—The lease of the Oriskany Ore & Iron Company, of which W. W. Taylor is general manager, on the Buena Vista, Iron Gate and Shenadoah blast furnaces and ore mines in Virginia, at the Oriskany property of the Alleghany Ore & Iron Company, a subsidiary of the Lukens Iron & Steel Company, Coatesville, Pa., will expire the latter part of this month. Part of the property will then be taken over by the Alleghany Company and the Iron Gate furnace operated; but the lease on the Buena Vista has been extended four months to work up the ore on hand. The Alleghany Company will make foundry and car wheel iron and Rogers, Brown & Co., who have sold the iron for 11 years, will handle the output.

The Northern Navigation Company has completed plans and will soon let contracts for a 500-ft. steel passenger steamer, to ply between Sarnia, Ont., and Duluth, which will be the largest and most finely equipped on the Great Lakes and will cost approximately $1,000,000. Passenger traffic over this route has increased rapidly in the past few years and although the company now operates two of the largest vessels on the lakes between these points it has been found the service is inadequate. The new steamer will be completed in time for the season of 1912. The headquarters of the Northern Navigation Company, which now operates a fleet of ten steamers in its passenger and freight service, is at Collingwood, Ont. C. A. McDonald is general manager.

The Dominion Bridge Company, Ltd., Montreal, Que., has enlarged its scope to go into the regular manufacture of shop, traveling and locomotive cranes and derricks. A. E. Johnson, formerly of the Brown Hoisting Machinery Company, is mechanical engineer.

Oil Fuel for Air Furnaces*

BY W. N. BEST, NEW YORK CITY

Many attempts to burn liquid fuel in air furnaces have failed because of the operator's not being able to melt the full charge or to get the metal as hot as when burning coal. Often the charge was oxidized to such extent that what metal did become molten was practically worthless. Usually a number of burners, each giving a round flame, has been placed in the side wall of the furnace, and as the number of burners was increased the equipment became more and more intricate. Something had to take the blame for the wasted time, material and effort, so oil was condemned as being unworthy of further consideration.

Let us for a moment consider the ultimate analysis of the average gas coal used in air furnaces and fuel oil: This coal contains 70 to 75 per cent. carbon, 4.5 to 6 per cent. hydrogen, 10 to 18 per cent. oxygen, 1 to 2 per cent. nitrogen, 0.5 to 1.5 per cent, sulphur. The caloric value is 13,500 to 15,300 B.t.u per pound.

The analysis of residuum or fuel oil is: carbon, 84.35 per cent.; hydrogen, 11.33 per cent.; oxygen, 2.82 per cent.; nitrogen, 0.60 per cent.; sulphur, 0.90 per cent.; gravity from 26 to 28 B.; weight per gallon, 7.3 lb. The caloric value ranges from 18,350 to 19,342 B.t.u. per pound.

Advantages of Oil Fuel Operation

From these data the natural conclusion is that oil, having a much higher calorific value than coal, ought to be able to melt the metal in a much shorter period of time than coal. Not only that, but it should also be able to bring the metal to the temperature required for even the smallest castings. It can do both if properly applied, and, furthermore, the quality of the metal is improved, for by chemical analysis and numerous tests it has been found that the castings contain no more sulphur than the metal did when charged into the furnace, and the tensile strength is consequently greater than that of metal melted by coal fire.

As the melter has the furnace under perfect control, the heats can be taken off much quicker than while burning coal, and the temperature of the charge while being tapped can be maintained without varying more than 25 deg. F. until all the charge has been run from the furnace. The operation of skimming is materially decreased—this is a very noticeable improvement which is especially appreciated by the melter. The high calorific value of oil also enables the melter to estimate within a few minutes as to the exact time when the charge will be ready to tap, which is a great contrast to conditions while burning coal, especially in rainy weather, when climatic conditions are unfavorable and the stack draft is materially affected.

The furnace is charged in the usual manner. The burner is started by opening the air valve, holding a piece of burning waste (which has been well saturated with kerosene) by means of a pair of pick-up tongs under the burner and then turning on the oil. There is no handling of fuels and ashes, consequently the services of the fireman and coal passers are dispensed with. There is great saving in floor space, for the oil tank is placed underground and the former coal bins used for other purposes. The fire brick lining of the furnace lasts 20 per cent. longer than with coal. Poor castings or imperfect ones caused by the metal being cool or sluggish are obviated entirely, for with liquid fuel the question is not—How hot can you make the metal, but how hot do you wish it. All these items should be taken into consideration when comparing the relative costs of using oil and coal in air furnaces.

Successful Installations

Strange to relate, the first air furnace which I ever tried to equip stands on the identical spot where the first malleable iron was made in the United States by Seth Boyden. The plant is now known as the Barlow Foundry Company, and is located at 28 Orange street, Newark, N. J. Mr. Barlow, the president of this company, is a very progressive man. He had tried on several previous occasions to burn oil on his air furnace but was not wholly discouraged because of his repeated failures, and when a friend suggested that he let the writer equip his furnace he was willing to give oil another trial. A combustion chamber was built in the original fire-box of his furnace on a Saturday afternoon more than a year and a half ago. On the following Monday the first heat was tapped out in the usual manner and to date oil has never failed or disappointed them. The saving of space because of their not having to store coal, the time and cost of operation, the quantity and quality of their output from this furnace are such that they have no more desire to return to coal again than to exchange their electric lights for tallow candles.

Several months ago George H. Graham, secretary and treasurer of the Malleable Iron Company, Oriskany, N. Y., visited the Barlow malleable iron works, and was so impressed with what he saw there that he has equipped his air furnace. This equipment is likewise a success in every respect.

As far as the writer has heard, these are the only two plants in the United States wherein oil has been successfully installed in air furnaces, but what has been done in these plants can be done in others. I believe that eventually all furnaces of this type will be equipped, even in localities where coal is cheap and oil comparatively high, for every progressive manufacturer wants to keep pace with the march of progress. Several malleable iron works are now installing this system.

Many firms have tried to improve the metal made in cupolas by adding steel to the charge, but the castings were not satisfactory, for steel requires more heat than pig iron. By constructing an oil-fired air furnace wherever most convenient in the plant, melting the steel and pig iron in this, they will be thoroughly mixed, and can either be run into castings at once or into pigs to be used in the cupola whenever desired. When metal is melted in a cupola it absorbs the sulphur contained in the coke, but in an oil-fired furnace of proper construction the sulphur contained in the fuel is oxidized in the combustion chamber before it reaches the bath of the furnace.

*From a paper presented before the American Foundrymen's Association, Pittsburgh meeting, May 23-26.

Carnegie Steel Company Buys Bassett-Presley Company

Announcement has been made at Cleveland, Ohio, that the Carnegie Steel Company, subsidiary of the United States Steel Corporation. has purchased the warehouse and stock of the iron and steel jobbing concern, the Bassett-Presley Company, in that city, and will take possession July 1. The warehouse is 165 x 360 ft., and is located on Thirty-ninth street, between Superior and St. Clair, being conveniently near the Pennsylvania tracks for carrying on a jobbing business.

President Ira B. Bassett says: "This sale is not caused by unfair treatment of any kind on the part of the Steel Corporation. The advances were made by myself and negotiations have been pending for a number of months. There is nothing whatever to complain of concerning our treatment at the hands of the Steel Corporation."

Mr. Bassett moved to Cleveland in 1869, when 21 years old, and entered the employ of the jobbing firm of Butler, Wick & Co., where he remained until 1871, when he was employed by another jobbing firm. W. H. McCurdy & Co. The latter firm became involved financially a few years later and Mr. Bassett carried on the business for the creditors for two years, after which the business was turned over to him, and in 1886, with George Presley, Jr., he organized the firm of Bassett & Presley. In 1901 the Bassett-Presley Company was organized. Mr. Presley died in 1902. The vice-president of the company is C. E. Kollfrath; secretary and treasurer, F. H. Dietz.

The price of gasoline has reached the lowest level in years. The wholesale figure is now $6.50 per barrel, or 11c. per gallon, in comparison with quotations of 13c. in 1909 and 1910, 11½c. in 1908, and 16½c. in 1907. The retail price has such a wide variation governed by locality and conditions that it cannot be quoted. The lower price is important in many industries using gasoline for fuel.

The Foster Bolt & Nut Mfg. Company, Cleveland, Ohio, manufacturer of carriage bolts, machine bolts, lag screws, etc., has appointed the Central Steel & Supply Company, Railway Exchange Building, Chicago, as its representative in the Chicago district.

The Steel Corporation Investigation

More Testimony by Chairman E. H. Gary

Chairman E. H. Gary of the United States Steel Corporation again appeared before the Stanley committee of the House of Representatives at Washington, D. C., on Wednesday, June 7. At this hearing he advanced another new principle of modern economics. This was that there should be governmental regulation of banks to prevent restraint of trade, an idea that developed from a discussion of the probability that the Morgan banks in New York had put pressure on other banks having Tennessee Coal, Iron & Railroad Company securities as collateral to force the property to a sale to the United States Steel Corporation. Judge Gary said that Mr. Morgan was the last man who should be accused of such an action, but that there should be governmental regulation to prevent a like contingency appearing.

The Tennessee Company Purchase Threshed Out Again

He declared that he never would have voted to consummate the deal if President Roosevelt had not approved of the absorption of the Tennessee Company by the Steel Corporation. Discussing the financial panic of 1907, when the Tennessee Company was taken over in a claimed effort to avert the failure of the New York brokerage firm of Moore & Schley and consequent disastrous results in the banking world, he said: "You have no idea of the financial frenzy which possessed New York in that panic. It would have been very easy for that panic to have gone beyond all bounds and affected the entire country. Any man interested in the banks of New York at that time would no more think of doing anything to injure any other bank than one of us would think of throwing a lighted match into a powder magazine near us. He could not injure another bank without injuring himself, and any decent man with sense enough to protect his own interests would not intentionally do anything to injure another."

This declaration was made after Judge Gary had been asked for more details relating to his conference with President Roosevelt regarding the Tennessee deal and his declaration that he regarded Mr. Roosevelt's refusal to interfere in the transaction as an act of great "constructive statesmanship." Chairman Stanley interjected "destructive as well as constructive."

Representative Gardner, of Massachusetts, asked many questions regarding the Tennessee transaction, particularly as to why the Steel Corporation, unless it wanted the Tennessee Company as a business proposition, paid more than $30,000,000 in United States Steel bonds, $11,000,000 more than it was believed to be worth, merely to prevent the failure of Moore & Schley, whose obligations amounted to $5,000,000 or $6,000,000. Judge Gary again explained the circumstances of the transaction, showing how it appeared necessary to buy out all the stockholders of the company. The financial situation was used, not to force the Tennessee stockholders to sell, but to force the Steel Corporation to buy.

Mr. Gardner then took up the stationary price of steel rails, and said that he had been informed by a railroad man who was a friend of John W. Gates that the railroads have a practice of prorating their contracts for rails, and in this way the independent mills are kept from lowering the price in competition. Judge Gary gave an account of the seven or eight rail mills and the way that they hold to the same price, declaring that there was no agreement, but the good sense of each and all maintained the price.

How the Steel Corporation Was Formed

Questioned by Representative Young of Michigan, Judge Gary said he wanted to tell the circumstances because of recent statements upon the subject with which he did not agree. He continued:

"The Federal Steel Company had been in existence about two years and a half. I was its president. This was some time in 1900 and Mr. Frick came to my office and suggested that the Federal Steel Company could be very much improved and he believed the Carnegie Steel interests were for sale. That was the first suggestion, in my opinion, which led to the organization of the United States Steel Corporation. After Mr. Frick had talked to me, I spoke to Mr. Morgan about it and he suggested that other directors of the Federal Steel Company be consulted regarding the Carnegie proposition. Mr. Frick talked with H. H. Rogers and other directors of the Federal Steel Company about it, but nothing came of it at that particular time.

"The next thing I heard was that W. H. Moore and others had secured an option from Mr. Carnegie for the sale of his steel plants. I had nothing to do with that option, but I knew that the Moores consulted with the First National Bank of New York regarding the option and that officers of the bank consulted with Mr. Morgan. Mr. Morgan sent a representative of his firm to me to discuss the question of utilizing the option on the Carnegie steel interests. As presented to me I did not think much of it and the matter was dropped. Soon after that Charles M. Schwab suggested to me that the Carnegie Steel Company might be acquired by the Federal Steel Company and I determined again to speak to Mr. Morgan about it, knowing that such a deal would involve financial backing. Mr. Morgan then did not give much encouragement.

Mr. Morgan Becomes Interested

"I did not report to Mr. Schwab about my conference with Mr. Morgan, but he came to see me several times afterward, and about that time J. Edward Simmons, president of the Clearing House Association of New York, gave a dinner, at the request of Mr. Frick, to bankers and men interested in the steel business. Mr. Schwab, Mr. Morgan and others were present, and Mr. Schwab made a statement which made quite an impression on Mr. Morgan concerning the Carnegie Steel Company, a description of its export business, its costs of production and the like. I was not there, but I have no doubt that Mr. Schwab had in mind the advantages of a consolidation of steel interests.

"The next thing I heard about it was on a Sunday morning not long after this dinner when Robert Bacon, then a partner in the firm of J. P. Morgan & Co., came to my home. He said that the night before Mr. Schwab had surprised Mr. Morgan by showing him a letter from Mr. Carnegie stating that he would sell his steel property and take bonds in payment for it. There had been a conference at Mr. Morgan's house. Mr. Bacon did not tell me anything about John W. Gates having been there. I never heard that he was there until I read his testimony before this committee in which he said he was at Mr. Morgan's house and that the plan of the United States Steel Corporation was formulated there. I cannot see how it could be that such plans were made that night.

"Mr. Bacon said that Mr. Schwab had submitted the Carnegie letter which fixed a price for the steel plants and that Mr. Morgan had told him to submit the whole matter to me. We went over the whole matter until lunch time and Mr. Bacon went to see Mr. Morgan and came back and we spent the entire evening going over the matter. At that time the Federal Steel Company was in need of finishing mills and sought a corporation of sufficient financial strength to increase its lines of business and particularly its export trade, which was then small. It was necessary to increase the export trade in order that this country should get its fair share of the business from neutral ports. We had a great deal of discussion about Mr. Carnegie's price, I having known that two years before he had offered to sell for a much less sum, but realized that the Carnegie Company had increased its earning capacity and its value.

A Carnegie Proposition Under Consideration

"I told Mr. Bacon then that if through the acquisition of the Carnegie Company a corporation could be completed large enough and rich enough to furnish adequate finishing mills and increase the export business, I believed his proposition was worth considering, and I agreed to meet Mr. Morgan the next day, Monday.

"I met Mr. Morgan, explaining my ideas and the details of the business reasons for entertaining the proposition. I said to him, "It seems to me that if you think a consolidation of steel interests on this line is practical we should start with the Federal Steel Company.'

"We decided to call in the men interested in Federal Steel and telephoned for Norman B. Ream, H. H. Rogers, D. O. Mills and others. We got into long distance telephone communication also with Marshall Field, of Chicago, who was also a director of the Federal Steel Company. A meeting was arranged and I told of the proposition, explaining the business opportunities as best I could. Mr. Morgan then stated that he knew enormous financial responsibilities would be involved, but that if we concluded it was a good, safe and reliable undertaking he would act as financial sponsor of a syndicate to carry it out. There was some opposition at first on the part of some of the Federal Steel directors, but they finally assented and that is where the United States Steel Corporation was actually born."

The Question of Overcapitalization

Judge Gary then told the committee of the details of working out the plan and of taking over the American Steel & Wire, the National Tube, the American Bridge, the National Steel and other concerns and the capitalization of the United States Steel Corporation at $950,000,000. "I want to say," he continued, "that, from the standpoint of the original cost of the concerns which were taken in and what it would have cost to reproduce them at the time, there is no doubt that the United States Steel Corporation was overcapitalized, but from the standpoint of what all the properties were actually worth—put together as a going concern—I do not believe that the Steel Corporation was overcapitalized."

In all the negotiations preceding the organization of the United States Steel Corporation, declared Judge Gary, he never had heard that the threat of Mr. Carnegie to built a plant to rival the National Tube Company, organized by Mr. Morgan, and to build a railroad from Pittsburgh to New York, connecting all his steel plants, had anything to do with it. "Such matters, as I learned, were testified to by Mr. Gates before this committee," he said, "never were spoken of in our deliberations. I do not remember that Mr. Morgan ever mentioned these matters to me."

Judge Gary said that when it came to the matter of discussing the charter and form of organization of the Steel Corporation Mr. Gates had nothing to do with it. Mr. Gates's connection, he said, was to look after the interests of the American Steel & Wire Company in the transaction.

The Pittsburgh-Monongahela Coal Purchase

A dramatic incident was furnished by a casual remark of Chairman Stanley that he had it on the authority of a United States Senator that the Pittsburgh Coal Company was selling coal at a loss to the United States Steel Corporation. Mr. Gardner at once demanded to know the name of the Senator, as did Mr. Lindabury, counsel for Judge Gary. Mr. Stanley said he had no right to bring the name into the record, but was willing to tell Mr. Gardner or any member of the committee privately. But the demand for the name was renewed so emphatically that Mr. Stanley abruptly called out: "Mr. Hall, come forward."

Richard C. Hall, former president of the Pittsburgh Stock Exchange, took the oath and was told to tell what he knew of the transaction. He said that the coal company was selling its steam coal at from $1 to $1.07 to the United States Steel Corporation, when it cost the coal company $1.26 a ton, that is, $1.02 to mine it and dividends and charges 24 cents additional. This was done under a 25-year contract which the majority stockholders had made. Some of the minority stockholders, he said, had been ruined by the deal. One stockholder, George I. Whitney, he said, a few years ago was enjoying an annual income of $360,000 a year from his dividends, and last year was thrown into bankruptcy. Judge Gary remarked that he hoped the Steel Corporation would not be charged with the bankruptcy of Mr. Whitney. It is better, Mr. Hall said, for the United States Steel Corporation to hold this contract than to own outright the Pittsburgh and Monongahela coal companies.

Mr. Hall said that there was a deal pending to sell 17,000 acres of the Pittsburgh Coal Company's coal lands to the Steel Corporation, and the great tonnage of coal now sent down the Ohio River would be diverted to the blast furnaces of the Steel Corporation in the West, in an effort to save their investment at Gary, which Mr. Hall characterized as an economic mistake, induced by the eagerness of the Chicago directory to further their own interests. He said he had this information from Senator Oliver of Pennsylvania. His purpose in making any statement in regard to it was to protect the Pittsburgh district from being stripped of its business. He declared that the Pittsburgh coal seam was the finest in the world, and the deal would ruin the business of the city. Personally, he said, he had not a dollar of interest in any of the corporations named.

The testimony elicited a promise from Judge Gary to produce the contract referred to, which will go into the record.

Former Competition of Companies Now United

On Thursday, June 8, Judge Gary was recalled to the witness stand and members of the committee directed their attention to the question of competition between the various steel companies before their absorption by the organization of the United States Steel Corporation. Judge Gary began his story in this way:

"The Carnegie Steel Company, the subsidiaries of the Federal Steel Company and the National Steel Company were to some extent in competition with each other. The principal competition in the steel industry then was between the Illinois Steel Company and the Carnegie—especially in the manufacture of rails. They were in substantial competition, and I don't wish to minimize that. The market of the Illinois Steel Company was in the West, and furnished railroads with headquarters in Chicago. The Carnegie had a natural market which surrounded its plant in Pittsburgh.

"Carnegie did at times go into Western fields, and he sold rails at $16 a ton at a time when the Illinois Steel very nearly went into the hands of a receiver. I believe that if the destructive competition had gone on the Illinois Steel Company undoubtedly would have been driven out of business by the Carnegie Company. I am inclined to believe that if the former management had continued in control the Carnegie Steel Company would have driven entirely out of business every steel company in the United States. Conditions improved after Federal Steel was formed and we reached the point where we could secure a very large portion of export business."

Steel Corporation Makes 60 Per Cent. of Total Output

At the request of Representative Young, Judge Gary read a statistical statement showing the relative output of the United States Steel subsidiaries as compared with the total production in the United States, from 1901 to 1910 inclusive. "There was a question with the finance committee," he said, "whether the public would not regard the percentage of control of the steel output as too large. For that reason the committee refused to listen to the appeals of various subsidiaries to increase their capacity."

He said the export business of his corporation is considerably more than 10 per cent. of its total business. "The total output of the United States Steel Corporation, including export business," he continued, "is 60 per cent. of the make of the country. Exclude our export business and the proportion of our business, as compared with the total steel output in the United States, is 50 per cent. The United States Steel Products Company, our export selling company, sells about 1,500,000 tons a year. Practically all this business is in the neutral ports of the world."

The Policy of the Steel Corporation

At this point Judge Gary said that he desired to make a general statement as to the policy of the United States Steel Corporation. He continued: "We believe in enforced publicity. We believe that the publicity of the affairs of corporations is the most important thing that can be done to insure protection to everybody concerned. That is not all that is essential, but that is the important essential. We started out with that idea in mind and we have adhered to it. There was a disposition on our part to keep away from monopolization, and we have succeeded. It has been our effort to keep prices at a reasonable point. I have never suggested an increase in prices

beyond a reasonable figure. The only reason we have attempted to prevent fluctuations was for the purpose of insuring stability.

"We have not pushed our business in such a way as to drive competitors out of business. Unrestricted competition means that the big companies will survive and the little ones perish. We have always kept wages as high as we possibly could. We have paid more than others for similar service. We have refused to decrease wages when others decreased them. Our wages are higher now than when we started. We have introduced and now have in force a pension plan and also a voluntary relief plan. This provides payments for people injured, or to the survivors of those killed, without regard to any question of legal liability."

Judge Gary said that the corporation had expended $1,500,000 in the last year for the introduction of machinery to prevent accidents. He told the committee that the corporation officers were trustees of a great property, that the company had 100,000 shareholders and that every move taken was planned carefully with a view to the interest of the shareholders and the rights of others concerned.

He denied that the corporation had ever purchased plants and dismantled them with a view of eliminating competition.

"In buying any properties have you in any instance made it a condition of the sale that the former owners should not enter business in competition with the corporation within a given district or for a given period of time?" Representative Young asked. The witness replied in the negative.

The Dinners Given by Judge Gary to Steel Men

Representative Beall of Texas was the most persistent of the committeemen in questioning Judge Gary in regard to the dinners given by him in New York to steel manufacturers. These dinners, Judge Gary said, were given whenever it suited his disposition and convenience and anything of a business nature transacted at the gatherings was reported to the newspapers.

"An interesting comment on one of those dinners was that the clams and the champagne came in together," suggested Mr. Beall smilingly.

"That was a facetious remark made by Joe Butler, the wit of the industry," Judge Gary replied. "I doubt whether he eats clams or drinks champagne. There was no undue hilarity at any of these dinners."

"This committee has no disposition to hold any officer of the steel company responsible for anything he does at dinners," observed Mr. Stanley. "We have nothing to do with the habits of the head of the steel company or the humblest citizen in the land."

"That is good law and good logic," said Judge Gary.

"What my learned friend, Mr. Beall, is driving at is this," said Chairman Stanley. "He wants to find out whether you have combined to regulate prices. We don't care whether you drink a tub of champagne at these dinners. If such agreements were arranged at the dinner, however, we will go into them, just as we will go into the counting room."

"Didn't the thought run through the progress of the dinner held at the Waldorf on January 11, 1911, that every one present was in honor bound to abide by your advice?" Mr. Beall asked.

Previously Representative Beall had quoted from a speech given at the January dinner, in which Judge Gary suggested that the output should be regulated to meet the demand. Judge Gary did not give a direct reply. Mr. Beall quoted Judge Gary as saying in the January speech that "we have something better" than a contract "to which a penalty might be attached." Mr. Beall insisted that the Gary speech indicated that the steel operators were actually working under agreement, although the agreement had not been reduced to writing.

No Agreement Made by Those at the Dinners

Judge Gary declared there was no agreement, that at the dinners there was merely an interchange of opinions that inured to the common good. He said: "There was no attempt to fix prices. They were not fixed. There was no possible way of fixing them. The purpose was to have friendly intercourse and prevent the demoralization of business by destructive competition. And if the Department of Justice, the President, or Congress should say this was not a proper or a wise proceeding the dinners would be discontinued in a moment. If the members of this committee believe it is better for all concerned in this country for the steel interests to enter into destructive competition than to try to legally maintain an equilibrium of business, it is up to you. If you want to take the responsibility on behalf of the government of saying destruction would be better than for the steel interests to confer with each other and for the maintenance of ruinous policies whereby the strongest would survive, the weakest go down and business generally be demoralized, we will not oppose your actions, but we believe that we have done the best thing we could do under the law through the maintenance of friendly relations."

"You were continually impressing upon those present at this dinner that every man's honor was involved," pressed Representative Beall. "Why were you so much concerned about it? Did you think that the meanest thing one of them could do was to reduce prices?"

The witness replied in substance that when men get together to talk business and one of them took advantage of information thus gained to make profit, he would not be highly regarded by those in the same line of business.

"Was it the consensus of opinion among the men at the dinner that night that the prices then prevailing should be maintained?" asked Mr. Beall.

Hoped That Prices Should Not Be Reduced

"It was the wish and the hope of every one there that prices should not be reduced," the witness replied. "There was nothing in any of the speeches made at the dinner that implied a binding agreement."

"Through the medium of the dinners you have sought to accomplish what could otherwise be accomplished through unlawful agreements," suggested Mr. Beall.

"I would not admit that," replied Judge Gary. He declared he had made no attempt to disguise the fact that the steel men of the country sought to maintain prices as near a level as possible through friendly interchange of ideas for the purpose of getting between the restraint of trade and monopoly provisions of the Sherman law, on one hand, and destructive competition on the other. He had never stood for unchanging prices, he declared, but against wide fluctuations. The recent action of the Republic Iron & Steel Company in reducing prices, he said, was because officials of that company had decided not to co-operate with others in the industry, which proved, he thought, that there was nothing binding in the dinners.

Judge Gary was asked about a cablegram received from Mr. Schwab at the time of the January dinner. Mr. Schwab expressed the hope that each one present would see the advisability of maintaining the present situation.

"Does that mean to maintain prices?" questioned Mr. Beall.

"That merely meant that every one present should show a disposition to co-operate."

"Would a rise in prices alter or affect the spirit of co-operation?"

"I have always expressed the hope in my speeches that neither a rise nor fall in price should affect the spirit of co-operation."

Mr. Beall quoted one of the dinner orators as saying that thanks were due to Judge Gary and others "for getting the steel men together."

"We have secured stability of prices in steel rails, and in time, perhaps, stability of prices in other products would be obtained," the witness continued. "He was expressing a hope."

Mr. Beall quoted another dinner orator as saying: "We are to be congratulated on having a wise policy laid out for us."

"What did he mean by that?" the witness was asked.

"He was referring, no doubt, to ideas I had expressed on a number of occasions," was the reply.

"These meetings were calculated to influence people to maintain prices," continued Judge Gary. "There is no doubt of that. It was intended to influence people to maintain prices so far as they could do so legitimately."

The Scope of the Sherman Law

"Do you believe that the Sherman law relates only to contracts that are enforceable between the parties?" asked Representative Littleton of New York.

"No, I do not mean that," was the reply. "Even if they agreed without contract in my opinion it would be contrary to the law."

"Suppose," said Mr. Littleton, "that you came together and by disclosure, each to the other, the same result is accomplished, to wit: the maintenance of prices; the object which the Sherman anti-trust law seeks to prohibit is thus accomplished, is it not?"

"No, I do not think so," was the reply.

"Do you think the Sherman anti-trust law was aimed at an agreement or the result of an agreement?"

"I think it was aimed at an agreement," replied the witness. He illustrated his point by saying: "Suppose two blacksmiths are walking down the street. One asks, 'What are you charging for your work?' Getting the facts, he replies that he will enforce similar charges. I do not believe such a transaction would involve a violation of the anti-trust law."

"The point I am making," said Mr. Littleton, "is that by a series of conferences among men, each understanding the other, a tacit agreement is reached. Does not that effect the same result as if the understanding had been reduced to writing?"

"It does not," replied the witness.

"Suppose that each one abides by the understanding?"

"Yes, if you and I know what the others are doing from time to time," replied Judge Gary.

The Amount Paid to the Morgan Syndicate

Chairman Stanley made the statement that the Morgan syndicate which financed the formation of the Steel Corporation received $137,000,000 in stock for its services, that it placed $25,000,000 in the concern and that its profit for promoting was the difference between these two sums. Judge Gary said that Morgan & Co. received $129,000,000 instead of $137,000,000 for the work of promotion.

"I don't know much about Wall street and I do not care much about Wall street," said Judge Gary in commenting on the prices of steel securities. He added that intrinsic value did not always measure prices in the exchange of securities in New York. It's a sad thing," he commented, "but it is true, nevertheless, that values are often made through manipulations. Steel bonds that I believe are as good as gold have sold as low as 68," he added.

Would Perfect the Sherman Law

Representative Littleton asked the witness in regard to his attitude toward amending the anti-trust law. "Would it be a sensible thing for Congress to create a joint committee for the purpose of hearing capital and labor, restrained and unrestrained industries, with a view of organizing and preparing an elaborate anti-trust law which would meet and correct the situation, which would strengthen the law where it needs strengthening and elaborate it where it needs elaboration?"

"I would welcome such a plan and would be glad to have it made practicable," replied Judge Gary.

Chairman Stanley asked whether increases in the price of products had been the result in part in increases in the cost of labor.

Mr. Gary replied in the affirmative, adding: "There has been an increase in the cost of labor of about 20 per cent. since the Steel Corporation was organized. Hours have been shortened and Sunday labor abolished, all adding to the labor cost." Another item to be considered in this connection, he pointed out, is the voluntary relief plan, which cost the corporation $1,500,000 a year. Still another item of expense to be charged up to labor cost was the pensions paid to superannuates.

No Agreement with Foreign Makers

"Is there a gentlemen's agreement as to prices and division of territory between the United States Steel Corporation and foreign makers?" Representative Young of Michigan asked. The witness replied in the negative. "I would like," he continued, "if it is not in violation of law, to bring about an understanding with foreign makers whereby we may meet from time to time for an interchange of opinion."

Replying to a question Judge Gary denied emphatically that American and foreign makers operated under an agreement whereby territory in which each should sell was defined, and that a fine was imposed where a party to the agreement violated its terms.

"Would it be possible for a subsidiary company to enter into an international agreement without the knowledge of the corporation officials?" Judge Gary replied that it would be possible for an officer of a subsidiary company to make such an arrangement. He expressed doubt, however, that any one connected with a subsidiary company would attempt to effect such an agreement without the authority of the corporation officers.

The Corporation's Minnesota Railroads

Judge Gary was questioned by Chairman Stanley relative to the operation of the corporation's railroads in the Mesaba region of Minnesota. There was an intimation in the question that the Steel and Hill roads worked under the terms of an agreement that proved disadvantageous to the "independents."

"There is no sort of agreement between Mr. Hill and our roads to keep up freight rates in the Lake Superior country," Judge Gary said. He added that approximately the present rates were in operation before Mr. Hill built his road in northern Minnesota. Judge Gary said that under the laws administered by the Interstate Commerce Commission the Steel Corporation's roads were stopped from discriminating against "independents."

"You could charge exorbitant rates to all, which would mean loss to your competitors and do no harm to you?" suggested Chairman Stanley.

"No," replied Judge Gary, "The rates of those roads are subject to inquiry by the Interstate Commerce Commission."

He Favors Government Supervision

Representative Bartlett brought up for discussion the question of "enforced publicity."

"Your suggestion of government publicity and close government supervision interests me," said Mr. Bartlett. "You went so far as to say there should be some department of the government to which you could go and get advice as to how to conduct your affairs. You thought the government should even have the authority to regulate prices. Did you mean that?"

"I did," replied the witness. "At the present time people identified with business corporations are uncertain as to what they may properly do within the law. It is this feeling of uncertainty as to the scope of the law that has interfered with business prosperity. A feeling of unrest has been created. There should be some way for us to be informed as to just precisely what we may do in the management of our business."

Judge Gary suggested that the corporations be permitted to operate under a federal license plan. If they failed to comply with the law the license to do business in interstate commerce could be revoked. When a license was revoked the corporation affected should have the right of appeal to the courts. "I would not get away from the courts as the final arbiter on these questions," he said. "That is all important, that is the salvation of this country."

Mr. Bartlett suggested that such a federal law would in all probability interfere with the power of state governments to regulate and tax corporations within their limits.

"The same reasoning would apply to railroads employed in interstate commerce, would it not?" observed the witness. "What we want is to conduct our business without the uncertainties as to the law that now surround us."

Percival Roberts, Jr., on the Stand

The question of United States Steel directors who hold places on the governing boards of railroads was considered while Percival Roberts, Jr., was on the stand. Chairman Stanley pointed out that three of the Pennsylvania Railroad directors, Frick, Griscom and Roberts, serve in the directorate of the Steel Corporation.

"Has any question ever been raised by the directors of the Pennsylvania Railroad as to the propriety of three of their number serving in like capacity on the board of United States Steel?" Mr. Stanley asked.

"No," replied the witness, who testified that he was a director of the United States Steel Corporation and of the Pennsylvania Railroad, which, he said, owned stock in the Cambria and Pennsylvania steel companies and gave orders for rails to the Cambria, Pennsylvania and United States Steel concerns. He said Steel Corporation directors who were also directors of the railroad had nothing to do

with determining prices for rails. The price of rails never came before the directorate of either corporation when he was present. They were fixed by purchasing and selling agents. Mr. Roberts said that once, before he became a Steel director, he told President McCrea of the Pennsylvania Railroad that prices quoted by the Steel Corporation for rails based on new specifications were too high. At his instance Mr. McCrea saw Mr. Gary, "and the Steel Corporation satisfactorily modified its price." Mr. Roberts cited the by-laws of the Steel Corporation and the Pennsylvania Railroad which prohibited directors from voting on contracts between the companies.

"How do you explain the fact that there has been no change in the price of rails since 1899?" Representative Beall asked.

"I think because the rate—$28 a ton—is fair alike to all parties concerned," replied Mr. Roberts. "Prosperity for the shipper means prosperity for the transportation company. It has never been the policy of the Pennsylvania to beat prices down. We want the shipper to be prosperous. It is to our advantage."

In answering questions as to the cost of making steel rails Mr. Roberts said he did not believe Andrew Carnegie made a profit out of steel rails sold at $16 a ton, as testified by Mr. Carnegie before the Ways and Means Committee in 1909.

"What was the cause of the jump in the price of steel rails from $16 a ton in 1899 to $28 a ton in 1900?" Mr. Beall asked.

"An agreement among the railmakers forced by destructive competition," replied Mr. Roberts.

"Prior to 1900, when there was a 'pool,' prices were stable," said Mr. Beall. "In 1898 and 1899, when there was no pool, prices went down. Now since 1900, with a pool in existence, prices are up again. Is that correct?"

Mr. Roberts replied that prices had not materially dropped since 1900, owing to changed conditions and the "law of reason." He replied in general terms, saying that the "law of reason" overlooked extremes.

"What are these changed conditions that you speak of?" Mr. Roberts was asked.

"In the last ten years," he replied, "people in private and public life have begun to regard many questions in a new light. I for one and probably you gentlemen were brought up in an age when we looked upon competition as a warfare. I think we have all changed our views. The railroads of the country were developed under destructive conditions. As a result you see the conditions of to-day. Competition is absolutely eliminated. The producer as well as the consumer is protected." He further stated that since the formation of the Steel Corporation business men in this country had new ideals which governed them to avert destructive competition. "I believe," he continued, "that through the Gary dinners men in the steel business have accomplished great results for the benefit of all by the application of good, common, American sense. Example has a great deal to do with the affairs of this world."

James Gayley Called to Testify

James Gayley, who was first vice-president of the United States Steel Corporation up to January, 1909, was called to the witness stand June 9 when the investigation was resumed by the Stanley committee. Mr. Gayley testified that he became connected with the Carnegie Steel Company in 1885. In 1892 he became one of Andrew Carnegie's partners. The early part of his testimony was devoted to a description of the growth of the Carnegie properties from 1885 until they were absorbed by the Steel Corporation. He was also questioned relative to the policy that marked Mr. Carnegie's administration of his iron and steel properties.

"What was the policy of the Carnegie Company as to fixing the prices of steel rails?" the witness was asked.

"As a rule steel rails were standard in price. It appeared to be generally known what the prices of steel rails were. For a long period the Pennsylvania Railroad Company practically fixed the price of rails. Other roads deferred purchasing until the Pennsylvania Railroad placed its orders. I recall Mr. Carnegie saying that the Pennsylvania had given him an order for 60,000 tons without investigating the price. That seemed to be understood."

When prices were changed, Mr. Gayley added, it was usually due to suggestions from the railroad presidents that the price ought to be lower.

In the early days of the Carnegie Company, he said, every company was absolutely independent, taking whatever prices it could get on steel products other than rails. Asked about price fixing and agreements, he said there were periods of war between steel companies which brought prices down. This practice, he declared, was destructive, and competition was carried to severe limits. "It was a fight and shake hands," he said. "They made agreements to recuperate, and then there would be another fight. Agreements were necessary from time to time, or ultimately one company would have secured a monopoly of the business."

Mr. Gayley was asked about the value of the Carnegie properties at the time H. C. Frick was engaged in litigation with Mr. Carnegie. At a previous hearing Judge Gary had said the value at the time was $76,000,000. Mr. Gayley said that while $76,000,000 was the book value of the Carnegie properties it did not represent anything like their real potental value or earning capacity. Being asked if any additions had been made to the Carnegie Company's property after it had been appraised at a book value of $76,000,000 and before it was sold to the Steel Corporation for almost $500,000,000, he replied:

"The company was always building and expanding its works and acquiring more property."

"What was the growth of the Carnegie Company from 1885 to the time of absorption by the United States Steel Corporation?" asked Representative Young.

"The growth was tremendous," said Mr. Gayley. "The Homestead plant, for instance, has grown from one mill to 'a city of mills.'"

He declared that new methods of manufacturing steel had advanced the values of the properties.

Mr. Gayley denied any personal knowledge that Andrew Carnegie had threatened to build a tube mill at Conneaut for the purpose of forcing the Morgan interests to terms, as charged by John W. Gates.

"The Carnegie Company had not actually started on the plant," he said, "but the ground had been bought—5,000 acres at Conneaut, on Lake Erie. Mr. Carnegie had not decided whether he would go into the manufacture of tubing or wire to use our surplus raw materials. It is true that the National Tube Company, a Morgan concern, which had been purchasing its raw materials of us, erected a steel plant of its own. They left us, we did not leave them. Mr. Carnegie thought of branching out so as to use the excess material."

"In other words," suggested Chairman Stanley, "when the Morgan company ceased to purchase of the Carnegie mill you planned to branch out so as to use this same amount of material yourselves?"

"That is about it," replied Mr. Gayley.

"There has been a suggestion," said Representative Young, "that Mr. Carnegie's announcement that he intended to build a tube mill was merely a threat made as a means of aiding him in disposing of his iron and steel holdings."

Mr. Gayley insisted that plans were made in good faith by Mr. Carnegie to build a tube mill. He further said he had never heard that Mr. Carnegie had threatened to build a railroad from Pittsburgh to New York, and that this plan had prompted the Morgan group to buy out Mr. Carnegie at a figure double the amount he had asked for his properties before that time. He said the road was already in existence, and required only the construction of 40 miles to the works at Braddock, Pa.

"Was Carnegie willing to sell his steel plants at that time?" asked Mr. Young.

"Well, I should say that he was willing," replied the witness.

Mr. Gayley said that he was not active in the negotiations for the purchase of the Carnegie holdings by the United States Steel Corporation, but that he had approved the trade as made by Mr. Carnegie.

The Carpenter-Tew Company is the new name of the Carpenter-Kerlin Gear & Machine Company, which coincident with changing its corporate name moved the factory and office to Factory 5 of the Bush Terminal Building, 67 Thirty-fifth street Brooklyn, N. Y. The removal was necessitated to secure enlarged facilities for manufacturing cut gears of all descriptions, a class of gears to which the company has devoted special attention.

The Steam-Hydraulic Forging Press

Its Field of Usefulness and That of the Forging Hammer

At the meeting of the American Society of Mechanical Engineers held in Pittsburgh, May 30 to June 2, a paper was presented under the joint authorship of Berthold Gerdau, of Düsseldorf, Germany, and George Mesta, president of the Mesta Machine Company, Pittsburgh, Pa., discussing power forgings, with special reference to the steam-hydraulic forging press. While not so stated, a sectional drawing was given of the forging press made by the Mesta Machine Company under rights obtained from Haniel & Lueg, Düsseldorf, and the opportunity has been taken of

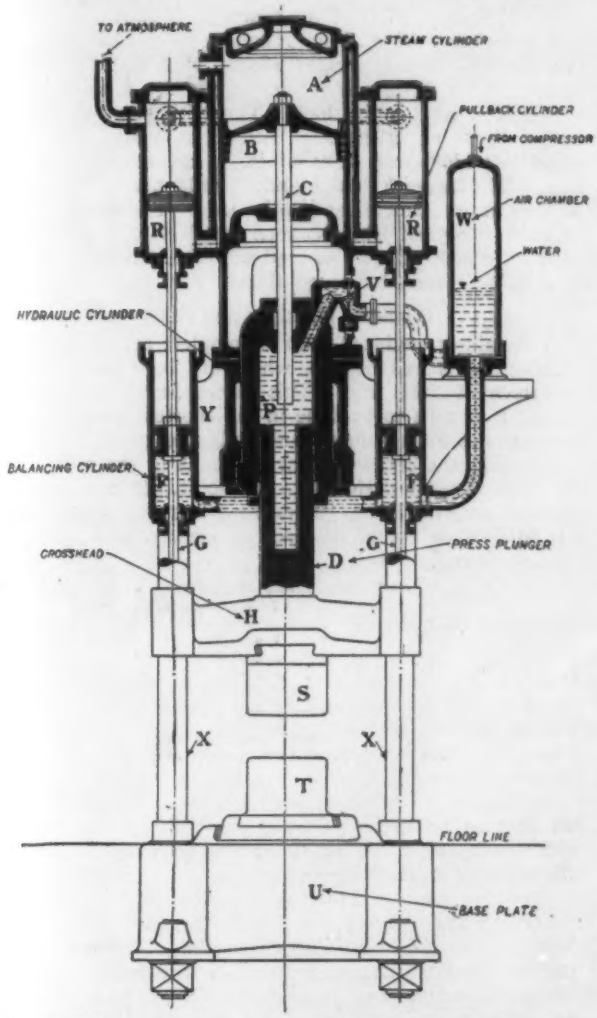


Fig. 1.—Scheme of Operation of Steam-Hydraulic Forging Press.

reproducing the sectional drawing as instructive material to supplement the extended illustrated article printed in *The Iron Age* of January 5, this year. The authors' opinions of the field of the forging hammer and that of the forging press are also given in the subjoined, leaving the reader to obtain a full copy of the paper if he desires to follow the calculations of the power requirements in terms of the steam consumption of the steam hammer, and of the hydraulic press in which the pressure of water is furnished by a separate pumping engine and of the so-called steam-hydraulic press in which, as in the present case, the water under pressure is supplied in connection with the steam intensifier.

The press consists of a heavy base *U*, Fig. 1, and four uprights *XX*, supporting the hydraulic and steam cylinders above. *S* and *T* are the dies, the upper one being carried by the cross-head *H*. This cross-head is moved into position for forging by the use of the steam cylinders *RR*. Pressure for forging is obtained by admission of steam into the top of cylinder *A*, which moves the piston downward and forces rod *C* into the hydraulic cylinder *P*. This action again causes the plunger *D* to move downward, carrying with it the cross-head and the upper die. The effect is that of a steam-actuated intensifier.

Hydraulic cylinders *FF* are for the purpose of balancing the cross-head *H*. These cylinders, hydraulic cylinder *P* and about one-third the air chamber *W* are filled with water. The air chamber connects through the check valve *V* to the cylinder *P*. The air pressure is pumped up to about 100 lb., which is sufficient to move the piston rod *C*

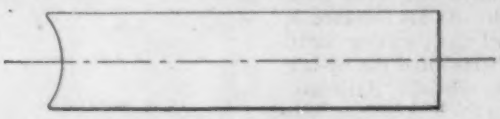


Fig. 2.—Surface Effect of the Hammer Process.

to the top of its steam cylinder. The areas of plunger *D* and of cylinders *FF* are equal, so that the plunger *D*, carrying the cross-head, is always balanced. By opening the check valve *V*, allowing water to flow from the hydraulic cylinder to the air chamber, and admitting steam to cylinders *RR*, the cross-head can be raised to any position, and similarly, it can be lowered.

In referring to the purely hydraulic press, the point is made that the process of forging does not always require all of the pressure maintained in the accumulator, but on the average only about 50 to 60 per cent. of the amount is needed, the remaining 40 to 50 per cent. being lost in the controlling valve. It is admitted, however, that for a drawing operation, like the drawing of the tubes, the continuous full pressure stroke of the maximum length for which the hydraulic press is built is an advantage. In respect to the economy of the steam-hydraulic press con-

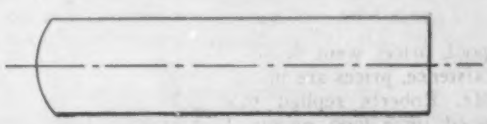


Fig. 3.—Mass Effect of the Forging Press.

siderable emphasis is placed on the fact that no dead volume of clearance has to be filled before the motion of the steam piston against its full resistance begins. The point is that the intensifier plunger floats on the water at all times.

What the authors had to say with regard to the field of the hammer and that of the press is in brief as follows: The small hammer, operated by steam or compressed air, has held its own for small work. Small pieces cool quickly and, as a rule, require a finer surface finish than is demanded in large forgings. The force of the impact increases as the forging cools so that work is done on the surface of the forging even when it is quite cool. The press, on the other hand, would be powerless to do any work on the cold piece unless the anvil surface was reduced very much. Thus the hammer will probably always be used for small work and for making tools, because tool steel must not be heated as much as machinery steel or wrought iron.

The features which make the hammer desirable for small work make it undesirable for large work. The hammer acts upon the surface of the material, driving the surface over the core without compressing the latter, as in Fig. 2. The press on the other hand, exerts a continuous pressure, which forces the semi-fluid material of the forging to flow under compression as in Fig. 3, which process tends to increase the density of the material. It is thus evident that from the standpoint of improving the quality of material of forgings the press is superior to the hammer.

The De Bats Crucible Steel Company, recently organized, has erected a new plant at Zelienople, Pa., along the Baltimore & Ohio Railroad and the Pittsburgh, Harmony & New Castle interurban railroad. It will contain 12 crucible melting pots for the manufacture of steel castings, such as automobile gears, crank shafts, pinions and other high grade specialties. The company has a special process of tempering its castings after they are removed from the sand and has made some interesting experiments. A recent test consisted of a casting being forged into a drill, properly tempered, and was then used to penetrate a section of high carbon hardened spring steel. The company will be prepared to operate about July 1. Louis De Bats has charge of the plant, while A. G. Zehner is secretary.

A New Illinois Structural Mill

The No. 2 Structural Mill, South Works, Illinois Steel Company

Paralleling its present No. 1 structural mill at its South Works, Chicago, the Illinois Steel Company is just completing the erection of mill No. 2. The beginning of construction work was authorized in October, 1909, and the test run was made May 11 last. It is interesting to note that the first piece to go through the new mill, an 8-in. I-beam, passed inspection as a salable product.

Steel for the new mill will be drawn from the present No. 2 blooming mill, the output of which was taken formerly by the Bay View mills at Milwaukee. When the billets for those mills began to be supplied from Gary, as they now are, No. 2 blooming mill was without an outlet in finished material. The new mill will absorb this output. It is designed to run on the lighter structural shapes, from 3 to 5-in. angles and beams, and channels from 4 in. up to and including 8 in.

The No. 1 structural mill has been rolling beams and channels from 6 in. up to and including 20 in., angles 4 x 4 up to 8 x 8 in., and Z-bars from 4 to 6 in. The smaller sizes heretofore have been rolled at Milwaukee and more recently at Gary also. The new No. 2 mill will round out, therefore, the present South Works capacity by supplying the lighter sections, while the equipment of the No. 1 mill is to be expanded to permit rolling the full range of sizes up to and including 24-in. beams. The new mill will also roll rail angle bars and continuous joints. The new construction will provide an estimated capacity of 12,000 tons monthly.

Safety of Employees Considered

In the equipping of this mill unusual importance has been attached to precautions for the safety of employees. The inclosing of all gearing with heavy steel casings has been made uniform for all rotating parts and has been extended to the building of steel lockers around switchboards. Very noticeable also is the extent to which runways and safety walks have been provided. Wherever there are lamps to be trimmed and machinery to be oiled platforms have been built, so that for those who have this work to do the risk of falling or becoming entangled is well nigh eliminated. For example, a continuous railed platform has been built through the roof trusses and extending the entire length of the mill building. From this all lamps may be trimmed and all of the electric feeder wires distributing current through the mill are at once accessible. For the crane men an outside stairway has been provided, and a gallery runs from end to end of the building at the height of the crane runway. From this entrance may be had through a door in each bay of the building directly on the cranes. The cranes themselves carry platforms on both sides and also cross platforms for the trolley.

The general layout of the new mill is shown in Fig. 1. The complete rolling, from roughing to finishing pass, is accomplished through eight stands with a total of ten passes. Rolls in the first four stands are 2-high, 24. in. in diameter and 44 in. long. The fifth stand is 3-high, with rolls 24 in. in diameter and 48 in. long. The sixth stand is 3-high, with rolls 21 in. in diameter and 48 in. long. The seventh and eighth stands are 2-high, with rolls 21 in. in diameter and 36 in. long. The return crossover is a diagonal table between stands No. 5 and No. 6, each of which affords two passes, the direction of the piece being reversed through them.

Duplicate Housings and Rolls

The mill is equipped with a complete set of duplicate housings, rolls and fittings, which are built up on shoes convenient to the mill. This arrangement enables the changing of rolls to be done in the shortest possible time, as the stands already fitted with rolls and guides are lifted complete by the crane to their positions in the mill. The roll table speed is designed to be 550 ft. per min., so that from the time the bloom enters the first stand of rolls until it is finished and on the hot beds the elapsed time of rolling will approximate 2 min.

Roll Speeds and Distances:

Stand No.	R. P.M.	Distance between stands. Nos. of stands.	Feet.
1	27	1 and 2	26
2	35	2 and 3	35
3	50	3 and 4	55
4	65	4 and 5	76
5	80	6 and 7	145
6	100	7 and 8	135
7	120	8 stand and last saw	135
8	130	Last saw to hot bed	11

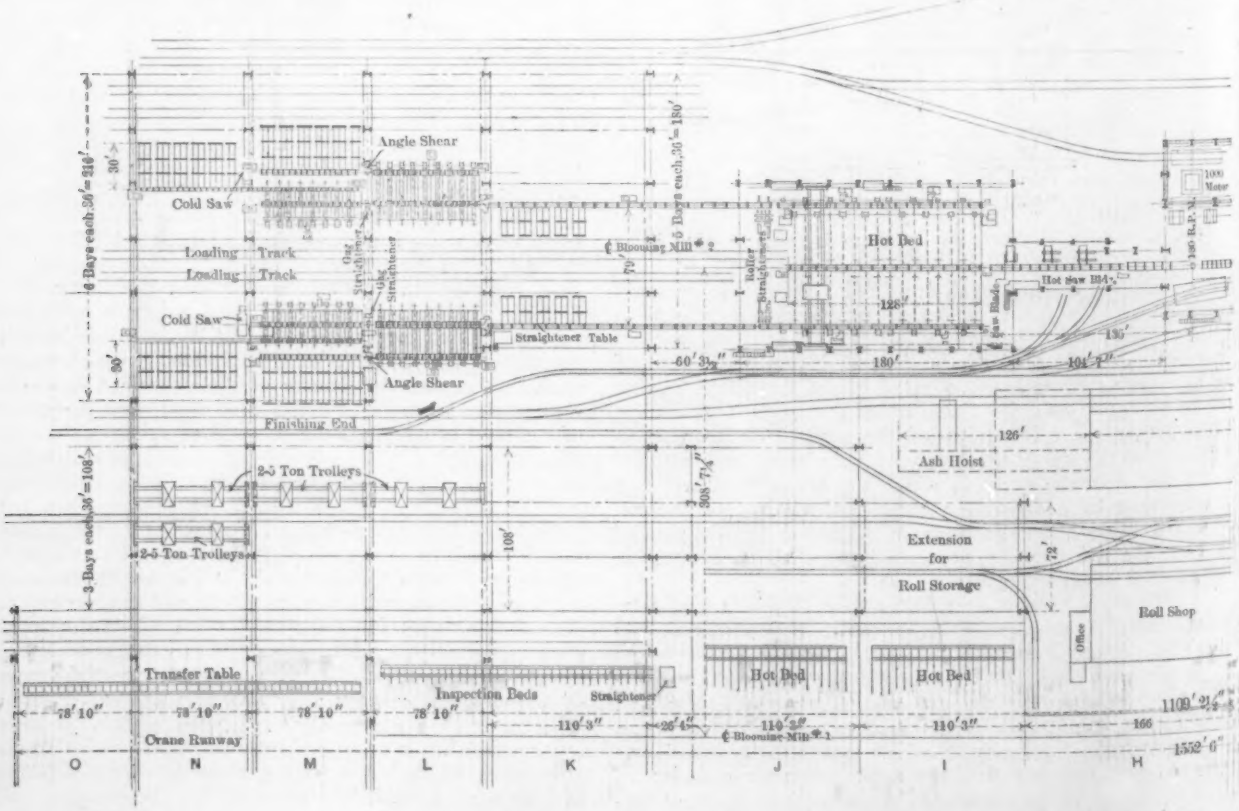


Fig. 1—Ground Plan of No. 2 Structural Mill, South Works, Illinois Steel Company. The Design of This Mill Was

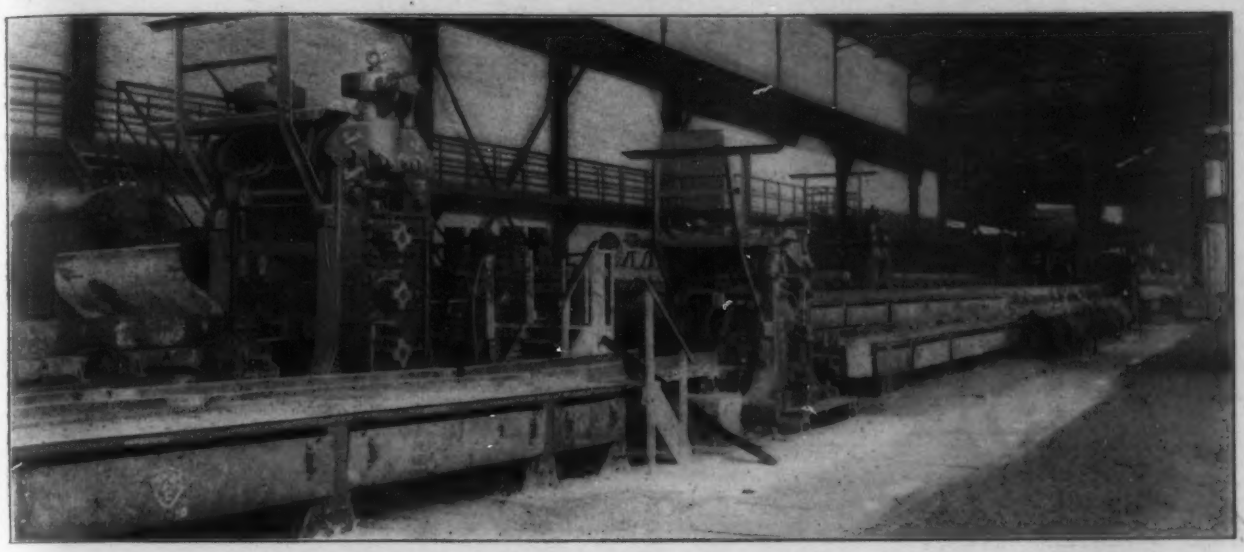


Fig. 2—No. 2 Structural Mill, Looking Toward the Blooming Mill. The Encasing of the Table Drives is Conspicuous.

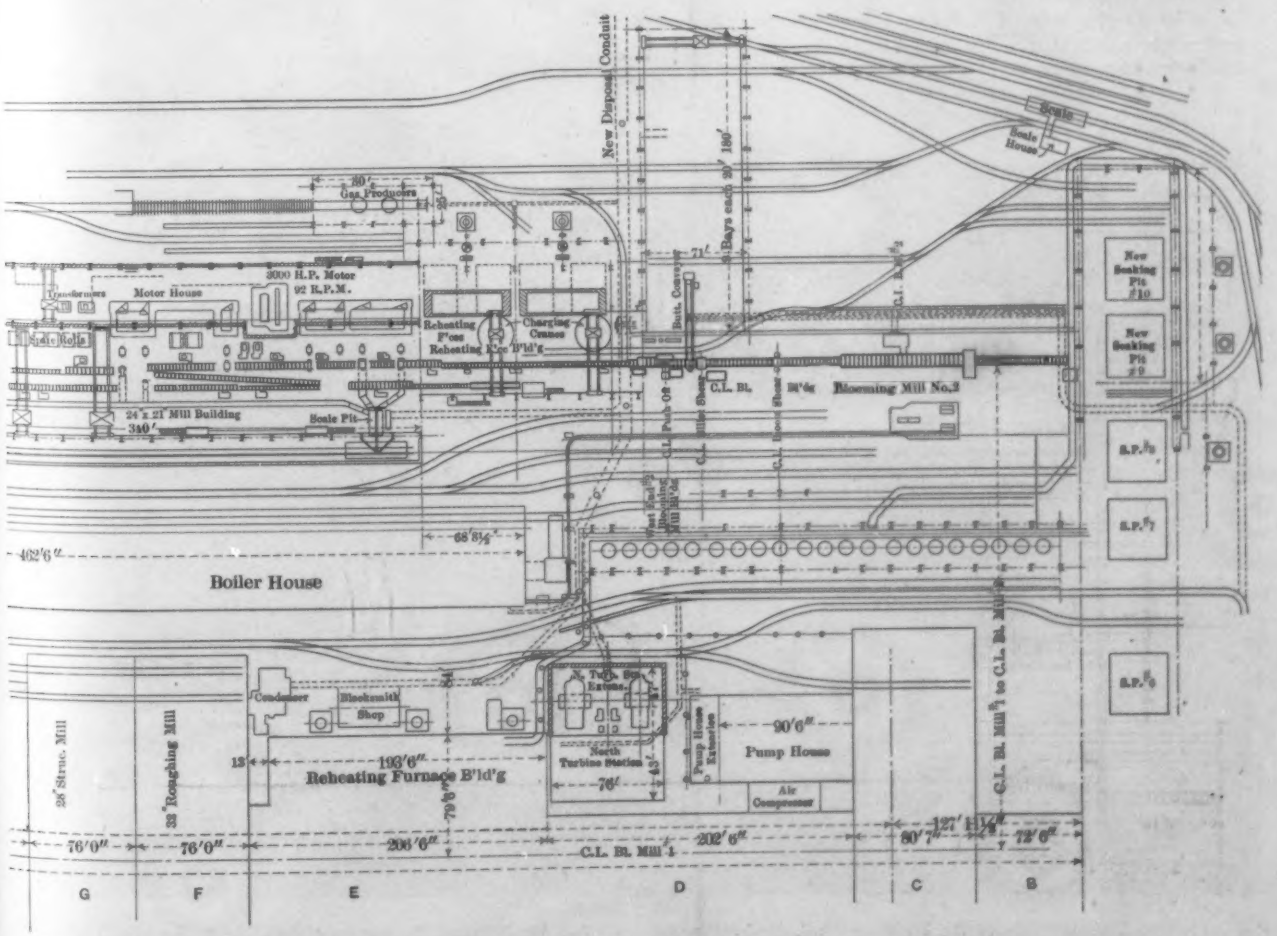
A general view of the mill room is shown in Fig. 2. Fig. 3 is a view of the hot beds from the mill end. Fig 4 shows one half of the loading beds out under the yard cranes. Reference to Fig. 1 will show the facility with which the material can be handled for cooling, classification, distribution and loading. The hot saw runout table traverses the middle of the hot beds. Material may be moved from this to right or left, following which the duplicate arrangement of roller straighteners, runout tables and transfer beds permits a rapid shifting of material to gag-press shears or cold saw, while the overhead yard cranes and parallel loading tracks afford every facility for stocking, loading and shipping.

The general mill equipment was furnished by the Standard Engineering Company, Ellwood City, Pa., and the finishing end equipment by the Johnston & Jennings Company, Cleveland. The three hot saws shown in Fig. 5 were built by the United Engineering & Foundry Company, Pittsburgh, as were the two roller straighteners, the angle shears and cold saws shown in the view of the loading beds given in Fig. 4.

Mill Electrically Driven and Controlled

The mill is electrically driven and controlled. The electrical installation was worked out with elaborate care, and in both motor room and mill room operating switches and controls are carefully grouped and protected. The mill table motors are all equipped with General Electric automatic reversing controllers. There are but two operating pulpits, and after the piece is on the approach table only two men are required for the operation of the mill. The mill motors are Crocker-Wheeler direct current FW and DW types and are interchangeable for all of the tables as well as the crane trolleys. The number of spare motor parts necessary to be carried is thus greatly reduced.

In driving the table rolls a slight departure from practice elsewhere has been adopted. Instead of driving the



Limited by the Previous Existence of No. 2 Blooming Mill at One End and the Yard Cranes at the Finishing End.

Fig. 3—The Hot Beds, Looking Toward the Finishing End. Only One Set of Roller Straighteners is Shown, the Duplicate Not Having Been Installed as Yet.

shaft which carries the bevel pinions from a spur pinion mounted directly on the armature shaft of the motor, this spur pinion is mounted between two solid outboard bearings on a separate shaft which is coupled to the armature shaft by a flexible coupling of the rubber buffer type. The shocks are thus taken up in these bearings and couplings. That the motors are protected thereby has already been established.

To meet the power requirements of the new mill the present power plant is being enlarged by the installation of two unusually large Rateau horizontal type mixed pressure turbo-generators. Each of these units will deliver 3000 kw turning at 1500 r.p.m. The turbines will operate ordinarily on low pressure steam exhausted at from 16 to 20 lb. absolute from two simple reversing rolling mill engines and two twin tandem compound engines together with their auxiliaries. This exhaust steam is delivered through five Rateau regenerators, where the pressure is equalized by absorption. Live steam, when used, will be introduced into the turbines through separate connections and nozzles into a high pressure stage from which it will work into the low pressure.

The Crocker-Wheeler generators of this set deliver direct to the mill driving motors a three phase 25 cycle current at 2200 volts. An auxiliary 500 kw motor generator set supplies direct current for the crane and mill table motors. The auxiliary equipment for the generating plant is of Worthington type. The condensers are of that recent design with auxiliary baffle plate cooling arrangement. The air pumps are 11 x 17 x 18-in. Laidlaw-Dunn-

Fig. 4—The Transfer Beds in the Finishing Yard, Under Construction. The Yard Cranes Extend Over Both No. 1 and No. 2 Mill Finishing End.

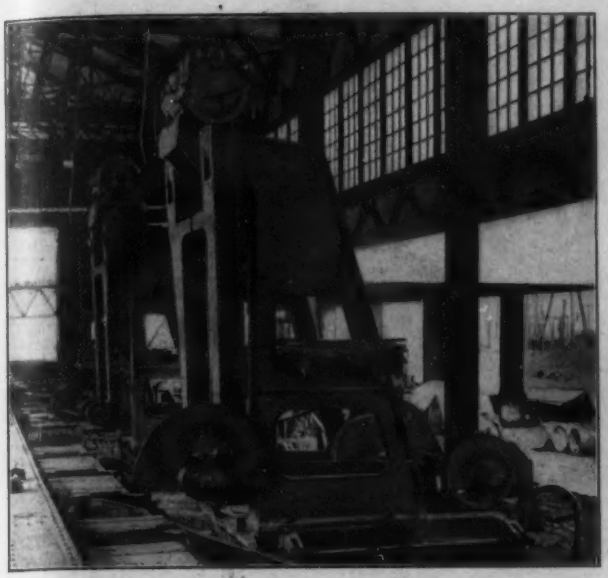


Fig. 5—Three Motor-Driven Hot Saws and Hot Saw Table.

Fig. 8—Gas Main and Valves for Reheating Furnaces.

Fig. 6—The Main Drive, No. 2 Structural Mill; Westinghouse, 3,000 h.p. Motor and Bevel Gear Drive.

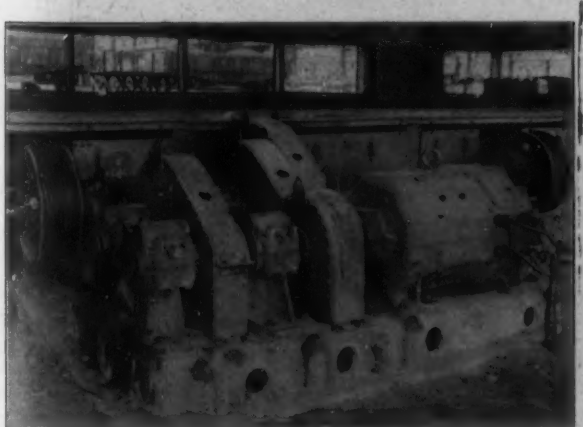


Fig. 7—One of the Crocker-Wheeler Mill Motor Drives, Showing the Complete Encasement of Moving Parts; the Cable Sheaves Are To Be Inclosed Also.

Gordon type. The circulating water for the condensers and for the entire mill is supplied from two 24-in. motor driven DeLaval centrifugal pumps with an approximate capacity of 18,000 gal. per min. An additional pump is also installed as a spare. This water is delivered from a distance of approximately 5000 ft. through a 48-in. riveted steel pipe.

Method of Driving and Starting

The mill is driven by two Westinghouse induction motors isolated from the mill in the motor room wing of the mill building. The main drive has a normal continuous rating of 3000 hp at a speed of 91 r.p.m. and drives seven of the eight stands. The finishing rolls are driven separately by a motor of the same type, rated at 1000 hp. Both motors have large overload capacities. The seven trains are driven from a main shaft carrying bevel driving pinions as shown in Fig. 6, the shaft being coupled direct to the rotor shaft of the motor. The finishing rolls are driven direct.

Mounted on the base of the main motor a most advantageous device has been installed for starting and for turning the mill over. A Westinghouse mill type No. 3-series wound 50 hp motor is here adapted to serve as a "barring motor." It drives from a sliding pinion mounted on its armature shaft. This pinion engages with teeth on the circumference of the main motor flywheel and is thrown in and out of gear by means of a pneumatic cylinder and lever. It is apparent that a distinct economy in current consumption and wear and tear on the large motor is effected when it is possible to place the mill in motion

Fig. 9—Reheating Furnaces and Charging Cranes, No. 2 Structural Mill, South Works.

through some other means. The inertia of the large motor also makes very difficult any movement of the mill through a fraction of a turn, whereas with the small barring motor this becomes very easy.

Auxiliary Equipment

To meet the probable requirements of the new mill the heating capacity of No. 2 blooming mill is being increased by the addition of two soaking pits. It is estimated that about 50 per cent. of the blooms will be rolled direct. The balance will require reheating, and for this purpose two five-door reheating furnaces have been installed. These are shown in Fig. 9, which is a view from the structural mill end looking toward the blooming mill. The two five-ton charging cranes for these furnaces are also shown. These were built by the Alliance Machine Company, as were all of the cranes in the mill. These charging cranes are of the latest type, in which the cage is rigid instead of

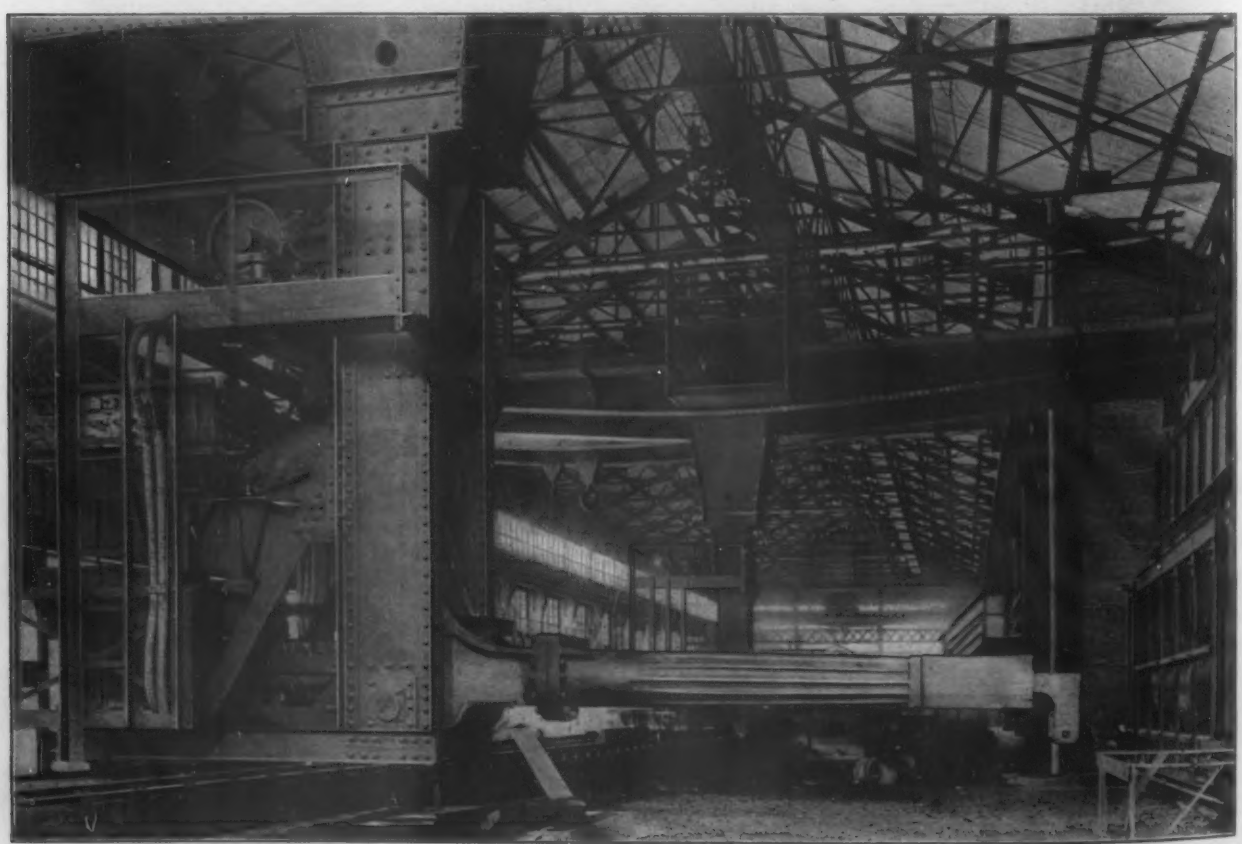


Fig. 10—Alliance Five-Ton Charging Crane for the Reheating Furnaces.

tilting with the charging arm. The charging arm in this type swings on a quadrant and apparently operates with greater facility than when the entire cage swings. Fig. 10 shows one of these cranes.

Gas for the reheating furnaces is generated in two Hughes mechanically poked gas producers. These are located in a separate producer house which parallels the motor room leanto of the main building. The producers are erected at a level which permits easy loading of the ashes into cars. The coal for charging is hauled in the cars up an incline and over track hoppers which discharge directly into the gas producers. Provision has been made for the installation of a third producer. Fig. 8 shows the rear of the reheating furnaces, the gas mains and valves.

The crane equipment includes 12 cranes in all, of which the principal are two 50-ton cranes in the mill room, each with 15-ton auxiliaries; one 50-ton crane in the motor room, and a 15-ton crane spanning the cooling beds. These cranes are not equipped with mechanical brakes but are controlled by a system of dynamic braking which involves a motor to generator conversion of the hoist motors.

The general building dimensions and proportions will be apparent from the layout in Fig. 1. The building and machinery foundations are of mass concrete. The waste water is carried off in concrete sewers. Some of these are open to the surface and are covered with steel floor plates. Through these open conduits the circulating water also is conducted in pipes hung on brackets from the sides of the passage, so that the pipes are thus easily accessible for repair. A concrete pit for collecting scale is built in the mill building, into which drains the water carrying scale from under the rolls. The scale settles and the water runs off through a screened gate. Over the pit a runway carries a trolley and clamshell bucket built by the Modern Steel Structural Company, Waukesha, Wis., and by this means the scale is loaded directly into cars.

For lighting, flaming arcs are used in the mill room and Cooper-Hewitt lamps in the motor room.

Fig. 7 shows how moving parts are encased for the safety of workmen.

Steam Engineers' Convention

Large Display of Engineering Specialties at Philadelphia

The Supreme Council of the American Order of Steam Engineers held its twenty-fifth annual convention in Philadelphia, Pa., June 5 to 9 inclusive. In connection with the convention was held the annual meeting and exhibit of the American Supply Men's Association. The headquarters of both organizations were in the Odd Fellows' Temple, where the exhibit of the Supply Association was also held. Business sessions of the council were held each day, while the exhibition was open from 9 a. m. to 10:30 p. m., except on Tuesday and Thursday afternoons and Wednesday evening, when special entertainment was provided. The afternoons of each day were principally given to the entertainment of the members and visiting delegates. On Tuesday afternoon an excursion was given on the Delaware River, while on Thursday afternoon an outing was held at Washington Park. On Wednesday evening a silver jubilee banquet was held at Scottish Rite Hall. The sessions of the council were all of an executive nature. On the closing day the following officers were elected: Supreme chief engineer, Lewis G. Schlehner, Philadelphia, Pa.; first assistant, George W. Goodwin, Baltimore, Md.; recording engineer, Florian J. Armbruster; corresponding engineer, C. F. Noble, Atlantic City, N. J.; treasurer engineer, Thomas J. Donovan, Philadelphia, Pa.; trustees, William Pairent, Philadelphia; D. B. Heilman, Reading, Pa., and W. R. Smith, Coplay, Pa. It was decided to hold the next annual meeting in Allentown, Pa.

The American Supply Men's Association also held its annual meeting during the week and the election of the following officers was announced: President, Henry Winner, Garlock Packing Company; vice-president, Frank Martin, of Jenkins Brothers; secretary, Fred L. Jahn, of Watson & McDaniel, Philadelphia, Pa.; treasurer, John W. Armour, representing Power. The director of exhibits, who is appointed yearly by the president, has not yet been named. The exhibit of the association was larger than had been expected. The arrangement of the booths was uniform throughout, and the space allotted was insufficient to meet the demands of the exhibitors, a number being forced to make their displays in a room adjacent to that which had been provided. A number of very attractive displays were made and the exhibition, which was under the direction of H. G. McConnaughy, Dearborn Drug & Chemical Company, is said to be the best the association has ever held. Following is a list of the exhibitors:

Trill Indicator Company, Corry, Pa., emergency specialties; Schade Valve Mfg. Company, Philadelphia, Pa., valves, emergency specialties; Anchor Packing Company, New York, packing; Garlock Packing Company, Palmyra, N. Y., packing; McLeod & Henry Company, Troy, N. Y., steel mixture boiler settings; R. & J. Dick, Ltd., Philadelphia Pa., belting; Ohio Blower Company, Cleveland, Ohio, steam specialties; France Packing Company Philadelphia, valve and piston packing; Cyrus Borgner Company, Philadelphia, firebrick boiler settings; Underfeed Stoker Company of America, Chicago Ill., stokers; Fairbanks Company, Philadelphia, machinery and supplies; A. B. Botfield & Co., Philadelphia, firebrick cements, furnace designs; Keystone Lubricating Company, Philadelphia, oils, greases; Vacuum Oil Company, Rochester, N. Y., oils; H. Belfield Company, Philadelphia, valves, etc.; Crandall Packing Company, Palmyra, N. Y., packing; Elisha Webb & Son Company, Philadelphia, blow-off valves; H. B. Underwood & Co., Philadelphia, special tools; Warren Webster & Co., Camden, N. J., heaters, purifiers; Peerless Rubber Mfg. Company New York, rainbow gaskets; Watson & McDaniel Company, Philadelphia, steam specialties; Parkersburg Iron Company, Parkersburg, Pa., charcoal iron boiler tubes; Frank H. Stewart Electric Company, Philadelphia, electric supplies; Lagonda Mfg. Company, Springfield, Ohio, boiler tube cleaners; McArdle & Cooney, Philadelphia, valves, steam specialties; Strong, Carlisle & Hammond Company, Cleveland, Ohio, steam specialties; E. J. Rooksby & Co., Philadelphia, Pa., special tools; American Steam Gauge & Valve Mfg. Company, Boston, Mass., recording gauges; O. F. Zurn Oil Company, Philadelphia, oils; Bird Archer Company, New York, boiler compounds; Cancos Mfg. Company, Philadelphia, packing; Home Rubber Company, Trenton, N. J.; Harrison Safety Boiler Works, Philadelphia, heaters, boilers, etc.; H. W. Johns-Manville Company, New York, boiler and pipe covering; Engineering Equipment Company, Philadelphia, specialties; William C. Robinson & Son Company, Coraopolis, Pa., oils; Wilkirk Electric Company, Philadelphia, electric lamps; Huhn Metallic Packing Company New York, packing; Thomas C. Warley & Company, Philadelphia, boiler compounds; Wise & Bailey, Philadelphia, belting and rubber goods; Green Tweed Company, New York, Palmetto packing; Pringle Electric Company, Philadelphia, electric supplies; Quaker City Rubber Company, Philadelphia, packing, supplies; Practical Engineer, Chicago; C. J. Rainier & Co., Philadelphia, representing William F. Powell, Cincinnati, Ohio; Nelson Valve Company, Wyndmoor, Pa., valves; Philadelphia Electric Construction Company, Philadelphia; Jenkins Brothers, New York, valves; Mason Coal Company, Philadelphia, anthracite and bituminous coal; William B. McVickers Company, Philadelphia, chemical engineer; Lunkenheimer Company, Cincinnati, Ohio, valves; George W. Lord Company, Philadelphia, boiler compounds; National Tube Company, Pittsburgh, Pa., steel tubing; John R. Livezey, Philadelphia, insulating materials; Keasby & Mattison Company, Ambler, Pa., asbestos coverings; Paul B. Huyette Company, Philadelphia, Reliance steam traps; Dearborn Drug & Chemical Company, Chicago, Ill., boiler compounds; Philadelphia Grease Company, Philadelphia; American Engineering & Mfg. Company, Philadelphia; Sarco Fuel Saving & Engineering Company, New York, Sarco steam traps; Brogan & Co., Philadelphia, steam specialties; William B. Powell & Company; Frick Grate Bar Company, Philadelphia, grates; E. F. Houghton & Co., Philadelphia, oils and steam specialties; Roto Company, Hartford, Conn., tube cleaners; Corday Packing Company, Trenton, N. J., packing, Ashton Valve Company, Boston Mass. valves.

The Niagara Falls Metal Stamping Works, Niagara Falls, N. Y., has let a contract for an addition to its present building. The addition will give the company two floors and a basement, each 60 x 100 ft. The basement is high enough for machinery, and, in part at least, will be well lighted by natural light. The present basement is sufficient for the heating plant and fuel storage. The new basement will have a 20 x 36-ft. fireproof vault for storing dies. Work has already commenced on the contract and all material has been ordered. The addition will be ready for occupancy some time in August. This will be the third enlargement in seven years.

A Novel Use of Allan Bronze

Making a Turbine Baffle from This Metal

Its No. 2 bronze was recently employed for a somewhat unusual purpose by A. Allan & Son, 486 Greenwich street, New York City. This consisted in making a baffle for a Curtis turbine for a large public service corporation. Figs. 1 and 2 are an elevation and a plan view, respectively,

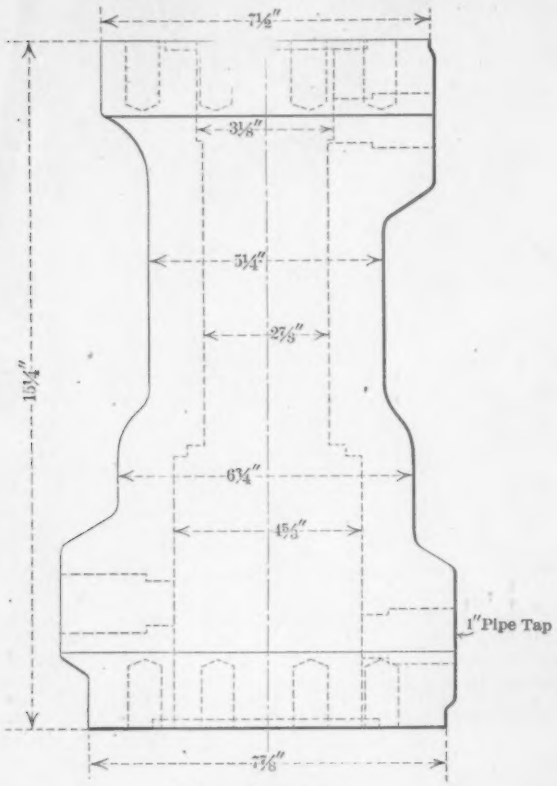


Fig. 1.—Elevation.

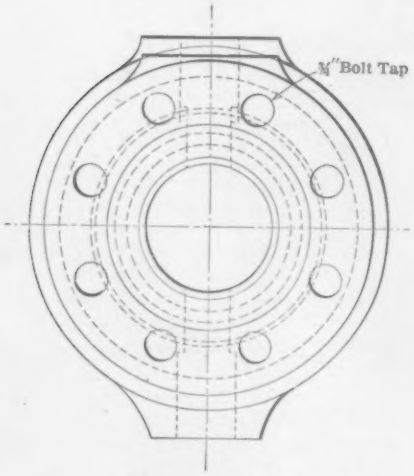


Fig. 2.—Plan View.
Baffle for a Curtis Turbine Made by A. Allan & Son, New York City.

of the baffle and Fig. 3 is reproduced from two photo-micrographs which show the grain of the metal when a test bar was broken while the polished section at the right illustrates the homogeneity of the mix. One of the baffles being tested to withstand a pressure of 3000 lb. is illustrated in Fig. 4.

The part for which this metal was used is placed between the pump which supplies the film of oil to the step bearing of the turbine and the bearing itself. The oil enters at one end of the baffle and after passing first through a wire gauge sieve and then through the threads of a helix which is inserted in the central opening emerges. This helix is adjustable for varying the length of the path of the oil and serves to prevent the escape of oil from the bearing with the consequent dropping of the step.

Originally these baffles were made from cast iron and when one cracked in service an effort was made to procure a metal which would be free from this defect. Manganese

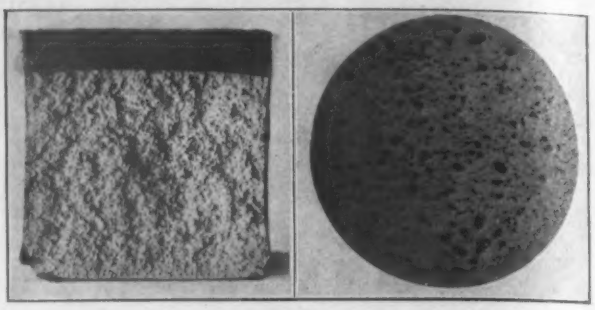


Fig. 3.—Photo-micrographs of Allan No. 2 Bronze Showing the Grain of the Metal and the Homogeneity of the Mix.

bronze was first tried and twenty castings were made. Only one of these were found to be perfect and an order was placed with A. Allan & Son. The first lot was made from the firm's manganese bronze and out of eight only two perfect ones were secured. On account of the high percentage of unsatisfactory manganese bronze castings it was decided to use another metal known as the Allan No. 2 bronze which is a lead-tin-copper alloy containing 25 per cent. of lead, 9 per cent. of tin and 66 per cent. of copper. Fourteen castings of the type shown in Figs. 1 and 2 were made from this metal and much better results were secured, five castings being in service at the present time with a number in reserve.

The grain of this metal and the homogeneity of the mix are clearly brought out in Fig. 3, which is a repro-

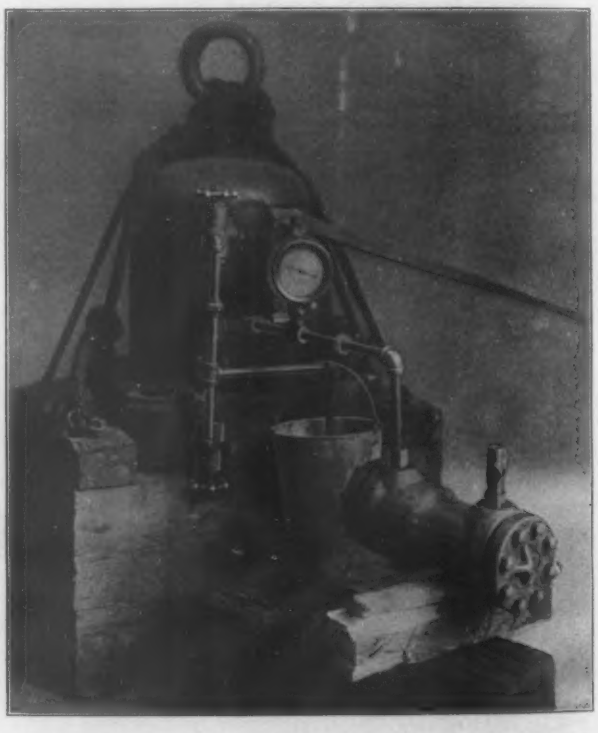


Fig. 4.—One of the Baffles Being Tested at a Pressure of 3000 Lb.

duction of two photo-micrographs. A test on two bars taken from the gates of the castings from which the bafflers were made gave the following results:

Test bars	No. 1.	No. 2.
Original diameter, in	1.4960	1.4980
Final diameter, in	1.4600	1.4700
Original area of specimen, sq. in	1.7577	1.7624
Final area of specimen, sq. in	1.6742	1.6972
Reduction of area, per cent	4.7	3.7
Elongation in 9 in., per cent	4.4	3.8
Elongation in 8 in., per cent	4.6	3.9
Actual yield point, lb	23,500	21,750
Yield point, lb. per square inch	13,370	12,340
Actual ultimate tensile strength, lb	30,710	30,100
Ultimate tensile strength, lb per square inch	17,470	17,080

In actual service these baffles are subjected to a pressure of 1500 lb. per square inch, but before being accepted by the purchaser they were subjected to a test in which a pressure of 3000 lb. per square inch was applied by the apparatus shown in Fig. 4.

The Pulaski Iron Company's furnace at Pulaski, Va., was blown out for repairs May 29. It will be relined and blown in again in about 30 days.

Distributing Factory Operating Costs

Proportioning Department Expenses and Charges in Cincinnati Planer Company's Works

An insight into the methods obtaining in the operations of manufacture in the plant of the Cincinnati Planer Company, Oakley, Cincinnati, Ohio, was given in *The Iron Age* of March 2. This article explained at some length how the supply of the raw material is properly kept up, including ready accessible records regarding the time requirements to get material and to work it into shape. It also included an exhibition of the methods of recording the time required in manufacturing the different specific articles and the relation of the time requirement to the allowance for premium to the individual workman. The scheme is a part of a system of accounting installed in the works by Miller, Franklin & Stevenson, New York. The opportunity is now presented for supplementing that article by an explanation how the sum total of expenses and charges of various descriptions are charged to the different departments of the work, this being also a part of the Miller, Franklin & Stevenson system.

The manufacturing expenses are analyzed and distributed once a month and the degree of detail in which the records are kept is indicated in Fig. 1, which illustrates a page from the expense analysis covering one of the producing departments.

The first item, that of fixed charges, includes taxes, insurance, building and machinery depreciation and interest on the investment. The sum of these yearly amounts are divided into twelve for apportionment. The taxes are divided on the basis of the relative amount of floor space occupied by each department.

A separate record is kept for all the items of expenditure included in power and lighting facilities. The total is divided among the departments on the basis of the actual amount of power and light used. As indicated from the table, it varies from month to month.

The charge for heating is apportioned in the same way. The heating service is purchased from an outside concern at a fixed annual figure and, as stated, is divided among the departments on the basis of actual use.

By general factory expense is meant items which cannot rightfully be charged to any individual department. The page given over to recording these general factory expense items shows that the total is divided among the various producing departments on a percentage basis according to the relation which the producing labor in the department bears to the total producing labor of the whole plant.

The element of non-productive labor, catalogued in the fifth line of the record, Fig. 1, is posted directly to the expense analysis from the pay-roll. The tabulation following in the matter of labor cost is indicated in Fig. 2. The non-productive labor is shown separately from the productive labor as indicated and the figures are readily obtained by grouping all the employees in one department upon one page, thereby securing the entire amount of the two classes of labor in each department in but two footings.

The other items of Fig. 1 are of obviously obtained from records of the office and of the store or stockroom.

Below the total expense found as shown in Fig. 1 is entered the total productive labor as obtained from the record of Fig. 2 and the ratio is noted that the total expense bears to that of the productive labor. It is understood that this percentage figure taken over an established period of time was used as the percentage of expense to apply to all productive labor costs on articles passing through the particular department.

A special requisition blank, of the form shown in Fig. 3, is used as the basis of the withdrawals from the stockroom recorded on the cost analysis sheet.

At first sight it might appear that the system involved considerable detailed work, but in actual practice it is found a simple proposition, requiring in the average machine-tool builder's plant not to exceed 1½ days' labor monthly. Certainly it is felt that this expenditure of effort is doubly rewarded by the accuracy obtained of expense distribution which gives the factory management a knowl-

The Cincinnati Planer Co.

Dept. 10 — 1911 — Planer Dept.

	Jan.	Yr. to Date	Feb	Yr. to Date
Share of Fixed Charges	231 60		231 60	463 20
" " Power & Light	164 19		170 70	334 89
" " Heat	26 50		26 50	53 00
" " General Office Exp.	484 72		465 38	950 10
Non Productive Labor	106 95		105 00	211 95
Waste	1 52		1 46	2 98
Brooms and Brushes	58		35	93
Emery Cloth	09		19	27
Stationery	26		38	64
Electrical Supplies	38		26	64
Miscellaneous "	57		61	1 18
Oil	2 37		2 24	4 61
Tool Steel	12 85		3 62	16 47
General Repairs	16 44		9 05	25 49
Total Expenses	1049 02		1017 33	2066 35
" Prod. Labor	1022 11		1035 84	2057 95
% of Exp. to Prod. Labor	102 6		98 2	100 4

Fig. 1.—Page from Expense Analysis of One of the Producing Departments.

Clock No.	NAME	PRODUCTIVE LABOR					Non-Prod. Labor		Total Clock Hours	Total Prem. Hours	Total Hours	Rate	Amount of Pay
		Actual Hours	Prem. Hours	Total Hours	Rate	Amount	Hours	Amount					

Fig. 2.—Method of Tabulating the Labor Costs.

edge of the balance or lack of balance of the cost of production in a given department. Finally it will be noted that the system comprehends applying the expense of a product as a direct proportion of the amount of labor put on the article for each department through which the work passes. It is to be noted also that the manufacturing expense items are separate from the selling expense. It is emphasized that the system is provable with the expense account in the general ledger and of course furnishes means for keeping in touch with the details of the items of expense month by month.

REQUISITION The Cincinnati Planer Co.

ANY ONE ACCEPTING THIS AS AN ORDER DOES SO AT THEIR OWN RISK

Date_____ No. 11350

Quantity	Piece No.	DESCRIPTION	Order No.	Cost of Each	Amount

Employee No._____ Stock-keeper_____ Foreman_____

Fig. 3.—Blank Used as Basis for Charging for Supplies.

Time Factor and Clearance in Punching Plates

Some interesting information on the pressures developed by a punch in respect to the time allowed for the punching process and in respect to the clearance between the die and the punch itself was contributed to the American Society of Mechanical Engineers in a paper presented before that society at its Pittsburgh meeting by Prof. Gardner C. Anthony, of Tufts College, Mass. The specifications are not yet completed and the paper in a measure was an advance announcement of the scheme for testing, which comprehends a rigging of the punching machine, or of a testing machine, as the case may be, in such a way that the pressures developed may be transmitted hydraulically to the steam engine type of indicator. With multiplying motion attached to the traveling head of the punch, cards may be taken showing the pressure in relation to the travel of the punch.

The first experiments were made at the New England Iron Works, South Boston, where the indicating apparatus was applied to a Bisbee-Endicott lever-type punch with the tests made on plates of ¼, 7/16 and ½-in. thick-

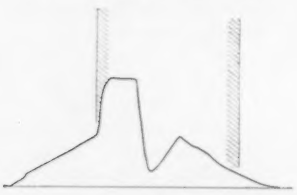


Fig. 1.—Flat Punch.

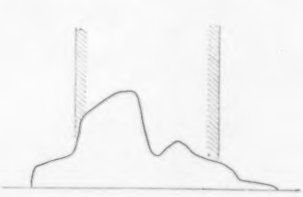


Fig. 3.—Shearing Punch.

ness, with punches ½ in. and ¾ in. in diameter. Subsequent tests were made by applying the apparatus to a 60,000-lb. Olsen testing machine.

Some of the specimen indicator cards are here reproduced. Both flat and shearing punches were used. Fig. 1 is a characteristic card on which, as in the case of the other card, the relation of the pressures to the degree of penetration of the plate is indicated by adding to the diagram the relative position of the plate. The card shown in Fig. 1 was taken while punching a ¼-in. mild steel plate with a ½-in flat punch. The inclined line at the left, Professor Anthony stated, indicates the pressure required to force the point of the punch into the plate, which in this case is about 1000-lb. The maximum stress was obtained at about 6 per cent. of the thickness of the plate and is 23,000 lb., making the shearing stress about 57,000 lb. per sq. in. The continuance of the pressure to the right of the plate indicates the force necessary to push the bur through the die.

Fig. 2 shows a card taken while punching a ½-in. plate of mild steel with a ¾-in. flat punch with the die 0.767 in. This illustrates the effect of small clearance on the force required to remove the bur, as the difference in diameters of punch and die was only 0.017 in.

Fig. 2.—Flat Punch with Little Clearance.

Fig. 3 shows the effect of using a shearing punch under conditions otherwise identical with those indicated in Fig. 1, that is, 0.257-in. plate and 0.654-in. die. The effect on the maximum stress caused by an increase in the time for the passage of the punch through the plate is shown in the accompanying table. The latter part of the table covers the effect on the stress of increasing and clearance between the die and the punch for both the flat and the shearing punches. This latter set of tests were made on the Olsen machine with a die of 0.767 in. in diameter and a plate 0.315 in. in thickness and the clearance is expressed as the difference in diameters of punch and die.

Effect of Time in the Punching Process.

Time, Sec.	Maximum Stress, Lb. per Sq. In.	Percentage of Thickness of Plate at Which Maximum Stress Occurs.
¼	31,000	10
80	30,000	18
310	25,500	18
495	26,000	13

Effect of Clearance Between Punch and Die.

Type of Punch.	Punch Diameter, In.	Clearance, In.	Maximum Stress, Lb. per Sq. In.
Flat	0.702	0.065	32,000
Flat	0.738	0.029	33,000
Flat	0.75	0.017	34,500
Shearing	0.702	0.065	32,500
Shearing	0.738	0.029	34,000
Shearing	0.75	0.017	34,000

The Newark Foundrymen's Association

The Newark Foundrymen's Association, Newark, N. J., met on the evening of June 7 and after the usual dinner held its regular monthly meeting, James Flockhart, vice-president, occupying the chair. After the regular business Mr. Flockhart gave an interesting account of his experiences at the Foundrymen's Convention in Pittsburgh, May 23. Some interesting talks were heard from members of the association voicing personal experience in foundry cost practice, the most important of which seemed to be on the subject of costs and cost accounting. Mr. Flockhart suggested that at the next meeting the members prepare an estimate on a sample casting, showing the various methods of figuring costs with the idea of investigating and adopting a method that might prove a standard. The meeting adjourned for the summer and the next session will be held some time in September or October, the date to be set later.

A New Canadian Shipbuilding Plant

The British-Canadian Shipbuilding & Dock Company has been organized by Grant Hugh Brown, 115 Broadway, New York City, with a capital of $10,000,000, all of which has now been subscribed, according to a cable dispatch to the New York Sun. Sir Henry Pellat, Toronto, is the chairman, and the board of directors includes Lieutenant-Governor Gibson of Ontario and Sir Charles Ellis, chairman of the John Brown Company, Clydebank, the builder of the Lusitania. The company will establish shipbuilding yards, docks and shops at Sydney, Nova Scotia, where some 300 acres of land have been purchased. It is proposed to bid on the construction of Canada's four armored cruisers and six destroyers. In a statement by Mr. Brown, he says that the company plans to establish a line of fast ships between Canada and England, making Sydney and Fishguard the terminals. The project is to construct three 26-knot vessels of an improved Mauretania class. The shipyard will have 11 building slips, eight of them capable of taking the largest ships, and a dry dock 110 x 1040 ft. The plans call for the erection of an armor plate plant.

American Machinery in Europe

Practical Suggestions of Lines to Be Pushed

BY C. A. TUPPER, MILWAUKEE, WIS.

During an extended tour of the principal industrial centers of the Continent of Europe, west of Russia, the writer was able to secure quite a comprehensive insight into the sale there of American machinery for metal-working plants, as governed by the conditions now prevailing. In this and other articles to appear from time to time in *The Iron Age*, the salient features of the situation will be presented.

In commenting on American export trade, of whatever nature, the tendency of speakers or writers has been to confine their remarks largely to criticism, to tell of the sins of omission, carelessness, etc., rather than the rewards of competence, and to arouse in the minds of manufacturers, to whom their fault-finding has been addressed, a feeling of instinctive antagonism. Temptation to do this is usually strong. A certain measure of criticism can, in fact, hardly be avoided, if only to bring out desirable methods or conditions by contrast. Nevertheless, much work has been done abroad in the introduction of American machinery that is worthy of further emulation; and it is the writer's intention to dwell upon this, instead of upon transitory faults, thus showing, by means of pertinent examples, some of the methods by which the needs of European users are to-day being successfully met.

Labor-Saving Methods Must Be Used in Europe

"Labor is growing dearer in Europe," wrote Charles Kirchhoff* on his return last fall from a trip abroad, "so that the industries there must have and are adopting American labor-saving methods and equipment." That is the gist of the present situation. Europeans have been slow to take up American methods. They did not do so until they were forced by economic conditions over which they had no control, and they are not going ahead now any faster than circumstances dictate. In Europe established traditions die hard; innovations of any kind encounter many difficulties that are practically unknown here. No manufacturer should make the mistake of assuming that, because he has had noteworthy or even phenomenal success throughout the United States or Canada in the sale of an improved type of apparatus, it will go equally well across the ocean. As a general proposition, however, it may be stated that really efficient machinery of any kind which will save time and labor, or both, can be successfully introduced in Europe.

The writer compiled, while abroad, what he believes to be a practically complete list of all American machinery used to any appreciable extent in European metal-working plants. After the notes made in traveling have been verified, so as to avoid possible errors or discrepancies, the full list will be published, together with comments made by European users in relation to their reasons for selecting the various tools. It may surprise many to observe how nearly these approximate the reasons by which they would themselves be governed in the purchase of tools comprised in the list. The intention is also to print, at the same time, a summary of high-grade machines of European manufacture which come into most direct competition with American tools, on the basis of efficiency, and to enumerate the machines which, on account of low prices or otherwise, practically shut out American tools from the several countries of Europe, each country being separately considered.

In planning a selling campaign abroad, one of the first of considerations to suggest itself is the extent of the field. In what countries of Europe can American machinery for metal-working be profitably sold? The answer is: In all of them, so far as their industries in this line have been developed. There are few tariff restrictions of an insurmountable character and very little in the way of national prejudices to overcome. The latter, in fact, where they exist, operate to the benefit of Americans, as in the case of the lingering French feeling against Germany or north Italian prejudice toward things Austrian. Competition in abundance is to be encountered, particularly in the matter of price; but in the countries where other competition, including that of the native manufacturer, is keenest the opportunities for the sale of American tools are greatest.

American Machinery Is Already Well Known

How far have the possibilities of the field been developed by American manufacturers? Answers to this question may, of course, vary considerably. The writer, on his first trip abroad, went with the ingrained impression, derived chiefly from reading articles on our export trade, that the existing opportunities had been only feebly grasped. He was accordingly surprised to find, from the day of landing in the first port, that installations of American-built machinery were to be met with on every hand. No manufacturer desirous of introducing his products in Europe should sally forth with the idea that, so far as his own countrymen are concerned, he is entering a virgin field. No matter what his specialty may be, he finds that Americans have been there before him, and, if he has a machine tool to offer, the chances are that apparatus somewhat like it has previously been extensively sold there.

But this fact, far from proving a discouragement, will be found to work in his favor. As has long been the case in the United States and Canada, the requirements of the metal-working industries are rapidly growing all through Europe, and the more widely American machinery is distributed the greater is the general demand for it from progressive users. American machine tools in particular are well and favorably known. A large number of the leading tool manufacturers of this country have for some time past made a specialty of export trade. They are well represented and strongly entrenched in all of the great industrial districts of the Continent. More are each year entering the field, and, when these new competitors for export business proceed along the right lines, their product is readily absorbed—provided, always provided, that it has sufficient merit to justify its choice over European tools or similar tools of American manufacture.

Fortunately for the trade, the machinery sent abroad from this country within recent years has been of a high standard of efficiency, and, except for the misunderstandings to be mentioned later in some detail, its service has given almost uniform satisfaction. Shop managers and superintendents are, therefore, well disposed toward American machine tools is general, and they are ready, as a rule, to investigate the claims of any new apparatus brought to their attention, even though they may not be in the market for it at the time. Nor is this done, except in rare instances, from any motive of idle curiosity. When the time comes that such a tool is needed the carefully filed memorandum is brought out for further consideration. Meanwhile, it may have been passed along to some relative or friend engaged in a similar line of business.

To one factor more than any other has been due the extensive introduction of American machine tools in Europe, namely, specialization. For the same reason their lead is maintained to-day. Most of the European establishments engaged in the manufacture of metal-working machinery started in as shops of general utility, building tools of standard design or in accordance with the purchaser's special needs. Gradually the trade of each firm became narrowed to certain specific lines of production, but the general tendency has been to cater to a wide range of demand within a circumscribed territory rather than to the particular requirements of one industry or phase of industry throughout a wide territory. One concern will, for instance, be making a multiplicity of machines, distinct in type, and selling its entire output to plants located not far from its works.

There are places in the United States and Canada where a similar condition exists, but it is the rule abroad to a far greater extent than on this continent. As a consequence, the refinement of design and economy of production developed here enabled Americans to offer machines of considerably greater efficiency than those manu-

*See *The Iron Age*, October 27, 1910.

factured in Europe and to lay them down in the various industrial centers there at prices sufficiently attractive to encourage their use. This fact has been so well recognized, both by Americans and Europeans, that its repetition may seem superfluous; but, in any consideration of the present or future possibilities of our export trade, too great emphasis cannot be laid upon it, for it is now and will remain the essential element in the widespread sale of American machinery abroad. Not only does it apply to machine tools, but also to labor-saving appliances of any description for which manufacturers here are seeking an outlet in Europe.

European Manufacturers Imitate Our Designs

It is, of course, vain to fancy that European manufacturers would sit idly by and see their markets further restricted by the invasion of American tools. From the very first they began to study our designs and to imitate them. Then followed numerous attempts to improve upon these designs. Some of the imitations were of the "just as good" variety, against which we are daily warned in advertisements, yet many of the improvements have been real improvements. But until within a year or two past foreign built tools were sufficiently outclassed by the general run of American machines to put no serious check on the sale of the latter. By the time a good imitation or "improvement" appeared the American manufacturers had a new machine of their own on the market, and it was usually offered at what seemed to the European competitor, or "near competitor," a distressingly low price.

At the present time specialization of this kind is no longer distinctively American. Many European manufacturers of machinery, particularly in Germany, have forged to the front with highly specialized tools of undoubted efficiency, tools which—it must be said to their credit—can compete on equal terms with those of the best American design. Loud and jubilant, therefore, are the claims now made abroad, especially in the Vaterland, that the trade of American firms in European industrial districts has not only reached but passed its zenith. Were it not for our tariff wall, say certain German manufacturers, they would now be in a position to "carry the war into Africa," to outsell us on our own ground. That they have foundation for this assertion is true. Many shrewd American observers of conditions abroad are also of the opinion that our trade on the Continent will decline henceforth rather than increase. The writer's own judgment, however, runs contrary to that belief.

If European users, who are the real judges, have been slow to adopt American methods and American machinery they are equally conservative in adhering to the latter, even under the counter stimulus of national pride. Moreover, a Frenchman, a Swiss, a Netherlander or dwellers in Scandinavian countries are not disposed to favor German products as against American. The prevailing sentiment, and this holds true in nearly all European lands, is decidedly the other way. Vice versa, in Germany the feeling toward American machinery is not at all unfriendly among users, while in relation to French or English trade it is somewhat strained. German manufacturers are, therefore, able to crowd American tool builders closely, as a rule, only in their own land or in the less important countries, including those overseas, where they are steadily building up an export trade in all lines.

The Growing Needs of the European Market

But far beyond any of the conditions mentioned in their favorable influence upon the American machinery trade in Europe are the growing needs of the market itself. Not only has production in every branch of metal working been expanding at a rapid rate but entire systems of shop layout and operation are undergoing radical changes. This is so evident that "he who runs may read." In consequence, the quantity of equipment required within the coming years will be far in excess of the ability of European manufacturers to furnish high-grade tools, unless the increase of their own shop facilities is altogether phenomenal and they abandon the large export trade now being fostered in other parts of the world, which is not at all likely. This situation is accentuated also by the almost universal tendency abroad in making shop improvements to buy the best equipment that can be secured regardless of cost, if the price asked is within reasonable limits.

"Ah," says a critic, "but Europe is to-day enjoying a season of exceptional prosperity. Eventually there will be another period of depression, with a falling off in the demand. What then?" Naturally, there will be a check on buying, and American trade in Europe is likely to be the first to feel it, but the writer does not believe that, even in this event, the decline will be as serious as one might suppose. The long-continued buying of labor-saving or time-saving machinery, to supplant older equipment, is an economic necessity, forced upon European manufacturers, and they are, almost without exception, laying up reserves to provide for it. Improvements will accordingly go on very much as planned, no matter if depression does bring decreased profits. Also, it is cheering to note that every indication now points to a long period of industrial activity in all manufacturing centers of Europe, so that the conditions above mentioned will probably obtain for some time.

Favorably Known Machinery Given Preference

The American machinery generally given preference abroad at the present time is the same that has been favorably known there for some years, provided its design has been kept up to date. One meets almost entirely with the products of old-established firms—not necessarily large concerns, but those that have been long enough in the business to acquire good reputations at home as well as in Europe. The foreign user, in common with all true conservatives, judges of the future by the experience of the past. While the matter of price is, of course, often the determining element, he is more concerned with quality. Where there has been any attempt to cheapen the product, he has been quick to detect the difference and to resent it. As a matter of fact, however, this has occurred in comparatively rare instances. Tales to the contrary, which have furnished the basis for much sharp criticism of American methods abroad, both by foreign and domestic writers, are generally without adequate foundation. They arise, in the main, from distortion of trivial incidents.

The argument that American machines are not built to last more than a limited period is met with very frequently, but this seems to be an impression that has gained currency in Europe rather than an actual fact, and is due to the lighter construction of many of our types, which has been contrasted unfavorably with the weight of metal put in most of theirs. However, even this impression is at present principally confined to non-users. Among actual users there has been a steadily increasing recognition of the fact that the weight of American machinery is generally so distributed as to be in the direct line of the working stresses and that more heaviness does not necessarily mean strength. Furthermore, the practical value of American courage in "scrapping" good machinery as often as working costs can be materially reduced by the substitution of impoved types is coming to be appreciated, so much so that sneers have given place to emulation.

European manufacturers of machine tools, particularly in Germany and Switzerland, have also less to say than formerly on the subject of light construction, for the reason that in bringing out equipment to compete in efficiency and price with American models they have found themselves compelled to adopt practically identical methods of designing. There is, to be sure, considerably more show of "scientific" calculation than one hears of in this country, but the net results work out very much the same.

Other criticisms, which come more properly under the head of catering to special European needs and preferences, as distinct from our shop practice, which will be treated in some detail later on, are being met in the proper spirit by American manufacturers and have recently presented no serious obstacle to the sale of American tools abroad, while many apparent grounds for fault-finding have been due purely to misunderstandings. With each of these obviated the matter is closed, and there is no good end gained by magnifying as criticisms any comments made by European users which have been based on an inadequate knowledge of the features of construction under consideration.

A Summary of Machinery Most in Demand

In the absence of the detailed list above mentioned a general résumé such as there will be space for in the present article incurs danger of being misleading, owing to the

fact that it comes in conflict with much individual experience, but the writer will attempt a summary, as follows:

Pattern-making machinery manufactured abroad and wood-working tools in general are considerably inferior to American types, and there is opportunity for sales in these lines, together with some foundry equipment. Much of the best of the latter, however, such as molding machines, originated abroad, and its development has kept pace with ours. American turret lathes have come widely into use in all European countries, and the makers that one sees represented are the same as those whose product is most frequently met with in this country. The new "manufacturing automatics" are also becoming well-known, and there are some good-sized installations of them. American speed lathes sell fairly well and engine lathes to less advantage, German and Swiss competition being difficult to overcome.

Drilling machinery of the various types offered in the United States, particularly the more ingenious of the radial and multi-spindle drills, has found good customers in Europe, but a number of European firms are now doing excellent work along similar lines, and, as they are able to offer these machines at sufficiently low prices to make the purchase of them an object on that account, future competition in this direction will be much sharper than heretofore. It may, however, be compensated to a large extent by the increasing needs of the market. Automatic screw machines from this side are in considerable demand. American planers have from the first been extensively used. The same is true of shapers, Cincinnati makers being especially well represented, in strong contrast to the predominance of Eastern firms in numerous other lines.

The development of gear cutting, shaping and planing machinery in France, Belgium and Germany, as well as to a lesser extent in other countries, has taken large strides within the past few years, but a number of machines of American make, notably those that have been designed to meet the requirements of the automobile and motor-truck industries, have found a good market in Europe. Some automatic gear-hobbing machines from the United States also meet with favor. American boring and turning mills and horizontal boring machines are also often encountered in the larger shops and seem to have attained enduring popularity, but the latter are close pressed by French and German tools.

Manufacturers of American grinding and polishing machinery have been getting their apparatus largely introduced, and in some instances it is now being manufactured locally under royalty arrangements, this, however, also being true of a good many other specialties. Some improved slotting machines, key-seaters, etc., of American manufacture are to be seen abroad, but this class of trade has not been developed as extensively as one might suppose it would be. Universal milling machines from American shops, particularly those manufactured in the writer's own State of Wisconsin, have obtained a firm foothold in all leading European countries, both as a result of merit and of the intelligent methods used by their makers in cultivating foreign business. Plain milling machines have also been extensively sold, together with some slab millers. There is a tendency among German tool builders to specialize more and more in the manufacture of the heavier milling machines of all classes, so as to promise increasingly dangerous competition from that source, and in respect to the lighter machines one meets with some good examples of French work.

Nut- and bolt-making machinery of American design is in use abroad to qiute an extent. No particular note was made of American bulldozers, forming rolls or straighteners, but some have been sold from this country. The purchase of power shears, hack saws, etc., is mostly from native manufacturers. For light forging and shaping machinery used in various classes of service there would seem to be opportunities open to a number of the leading concerns in this country specializing along those lines that are not now availing themselves of them. For heavy work the apparatus required can ordinarily be bought to advantage from nearby builders. Some manufacturers of accessory equipment, such as blowers, oil or gas furnaces, etc., are, however, apparently doing well in this field.

Pipe threading and cutting machines from New England, with related tools, formerly sold extensively. Any of proved economy can still be placed, but the local product is now more apt to be selected in most European countries, because of the lower price at which it can be offered. American stamping and punching machinery and the use of spacing tables for handling large plates or long strips, etc., have developed methods in this country which appear to be more economical than those used abroad. There should be and are openings along these lines for the extension of the trade of manufacturers having suitable apparatus to offer.

In the evolution of testing machinery, hydraulic pressure equipment for machine, boiler or forge shop service, German, Swiss and Belgian manufacturers have, in the writer's opinion, been generally in advance of American designers. They do not seem to be threatened in their home markets, so far as standard machines are concerned, by any serious competition from the United States. There are, however, some American specialties including auxiliary apparatus, of undoubtedly superior merit. In connection with wheel presses, for example, a large manufacturer of agricultural machinery has put in service at its works abroad American triplex, compound pressure pumps, with automatic cut-out for the high pressure cylinders, which save more material and have a greater earning capacity than any pump of European manufacture observed in other shops.

While foreign-built compressors for shop service generally hold their own, the best pneumatic tools are in many cases admittedly those of American design. There is also a large established trade in small shop tools, machine appliances and machinists' supplies of every description, this business being chiefly in the hands of Eastern tool specialists. American saws for both metal and wood cutting have had a heavy sale all through Europe, and the prospects for increasing trade are good. The business formerly enjoyed by some European firms, especially in Germany, has been seriously lessened by this competition. In the district principally affected an effort has very recently been made to inaugurate discrimination against all classes of American products, but it does not seem to have made much of an impression upon users.

American Instruments of Precision

Contrary to previous impressions, the writer learned that American measuring tools and instruments of precision are favorably regarded abroad, even in Switzerland and Germany, where one would suppose that home types would be used to the practical exclusion of aught else. This fact was used, in conversation with shop superintendents and foremen, to refute the insinuation not infrequently made that the extreme precision of European work outclassed that of American designers and manufacturers. In France, Belgium and Italy, however, the French and Swiss instruments predominate.

Only in respect to power and electrical machinery, compressors, pumps for general service, etc., as far as these are included in the equipment of metal-working plants is the situation discouraging from an American standpoint. In every other line, and to a limited extent even in these, American apparatus has at least a fighting chance, with very good opportunities as a whole.

The value to the reader of this and other articles must, of course, be mainly suggestive. What others have done he can do, if he has the machinery to offer and the will to undertake a foreign selling campaign along the lines approved by experience. Such experience has, in most cases, been dearly purchased by those who were early in the field but is now one of their most profitable assets. In another article the writer will, therefore, pass to a consideration of selling methods, as demonstrated by what American manufacturers of metal-working machinery have already done abroad.

For more than two years a factory has been running at Marathon, Texas, extracting rubber from the wild guayule shrub. This shrub, until a few years ago, was one of the most despised of all the desert vegetation. It attains its best growth on land that is practically worthless for any other purpose. The statement is made that there are more than 6,000,000 acres in that part of Texas on which the shrub may be grown as a commercial proposition. It is propagated both by seeds and by cuttings. Other factories are projected as a result of the success of the pioneer establishment.

Mower Part Molding Machines

Two Recent Products of the International Molding Machine Company

An order recently completed by the International Molding Machine Company, 2300 South Western avenue, Chicago, Ill., consisted of 36 molding machines for making agricultural implement parts which were shipped to a large

Fig. 1.—A Machine for Molding Mowing Machine Wheels Built by the International Molding Machine Company, Chicago, Ill.

European manufacturer. All of these machines were especially designed for the work which they will be called upon to perform and each detail connected with the molding of the patterns was provided for in the construction. The machine used for molding patterns for the wheels of mowing machines is shown in Figs. 1 and 2, while Fig. 3 illustrates the one employed in connection with the production of the frames of the machines.

As will be noticed from Figs. 1 and 2, the wheel machine is entirely encased to prevent the working parts from being obstructed by sand falling upon them. When the pattern and the stripping plate are properly located in the machine there are no openings in which the sand can enter and lodge. The casings of the wheel machines are fitted in such a way that when necessary they can be readily opened, as shown in Fig. 2, for oiling or inspection. The drag portion of this machine is operated as a turn-over machine, or in other words, after the mold has been rammed up, the bottom board is clamped on and the complete equipment is picked up by a quick-acting traveling crane, turned over and moved along and set down on the floor. This arrangement has been employed to obviate the necessity of barring the flask and turning the mold over after it has been made. After the pattern has been drawn the machine is lifted off and turned back to its

Fig. 2.—View Showing the Machine Casing Opened for Inspection and Repairs.

original position. In this way there is no danger of the mold being damaged as the pattern remains in it while it is being moved preparatory to turning it over or while it is being carried along the floor to the place at which it is to be set down. The hight from the floor to the top of the frame in this machine is only 17½ in. and this extremely small dimension was necessary since the machine had to be very low in order that the molds, which were of a large size, might be easily rammed. The design and the arrangement of the cranks and other working parts is such that they operate within this comparatively small space without interfering with the pattern, the stripping plates or the stools.

The frame machine which is illustrated in Fig. 3 conforms strictly to the outline of the pattern and consequently is of a very irregular design. This construction was employed in order that there might be no superfluous sand to ram, and as a result the patterns and the stripping plate extend beyond the ends of the machine frame. The casings cannot, therefore, be fitted to this machine until the mounting is finished, but when this is completed they are attached to the stripping plate at the top and to the base plate of the machine at the bottom, as is clearly brought out in the engraving. When this has been done the machine is encased as completely as the one employed for producing the wheel patterns. The yoke to which the pattern is attached is cut down or filled up according to the plane of the parting line to eliminate all unnecessary time and expense in fitting the pattern. This machine operates on exactly the same principle as the other and the hight is the same, 17½ in. from the floor to the top of the frame.

Each of these machines requires eight men to operate it, divided as follows: Six for ramming up, being equally divided between the cope and the drag; one man to handle the crane and the eighth to set the cores and assist the crane man. The flask used on the wheel machine is 9¼ in. deep and has an internal diameter of 36 in. This crew of

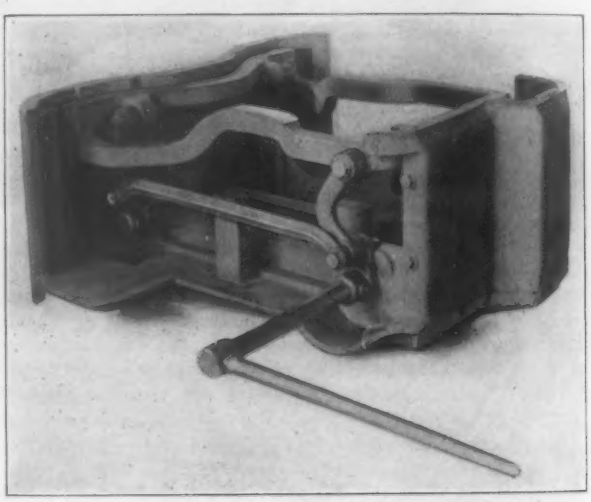


Fig. 3.—Another Type of Machine for Molding Frame Patterns.

eight men, which are not skilled workmen but ordinary laborers, produce from 250 to 260 wheel molds and 135 frame molds per day.

Lake Ore Shipments for May

The movement of Lake Superior ore from upper Lake docks in May was 3,684,819 gross tons, an increase of 3,353,174 tons over the initial shipping month of April, but a decrease of 2,396,539 tons, or 39.40 per cent., from the shipments for May, 1910. The total shipments to June 1 this year were 4,016,464 tons, as compared with 7,601,665 tons to June 1, 1910, a decrease of 3,585,201 tons, or 47.16 per cent. In the following table the shipments are given by ports for the two years, in gross tons:

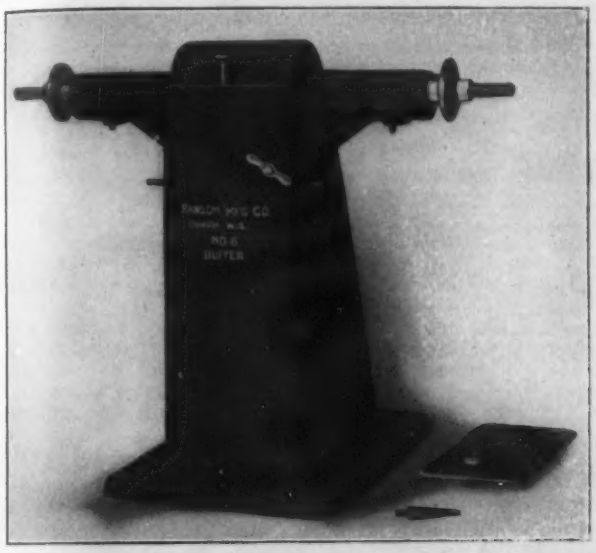
Port and dock.	May, 1911.	May, 1910.	To June 1, 1911.	To June 1, 1910.
Escanaba	436,008	749,091	529,540	972,117
Marquette	204,093	481,325	218,931	616,885
Ashland	226,528	588,604	267,865	807,307
Superior	1,239,153	955,651	1,315,892	1,310,958
Duluth	896,113	2,220,758	947,155	2,530,185
Two Harbors ..	682,924	1,085,929	737,081	1,364,213
Total	3,684,819	6,081,358	4,016,464	7,601,665
Decrease, 1911..	2,396,538		3,585,201	

Superior is shipping an increasing percentage of the total, its percentage to June 1 being 32.76 as against 17.25 to June 1, 1910. Duluth's shipments have decreased for the same periods from 33.28 per cent. of the total to 23.58. The percentage for Two Harbors, the third port at the head of the Lakes, was 18.35 this year as compared to 17.95 in 1910.

The Wisconsin Railroad ore docks, Ashland, will hereafter be known as the Soo Line ore docks.

The Ransom Buffing Lathe

The No. 6 buffing lathe which has been brought out by the Ransom Mfg. Company, Oshkosh, Wis., is designed especially for handling heavy buffing and grinding work. One of the special features of this machine is a type of construction which enables the grinder to be driven by a belt from a line shaft underneath the floor by an entirely inclosed belt or from an overhead countershaft. The shifter handle controlling the movement of the belt is shown at the right of the column near the top and the left is easily moved by giving this handle a half-turn. The journals are exceptionally long and are babbitted. Dust is prevented from entering by a special type of construc-



The No. 6 Buffing Lathe Built by the Ransom Mfg. Company, Oshkosh, Wis.

tion and the bearings are provided with ring oilers. Its large floor area and great weight are two other points worthy of notice.

The following table gives the principal dimensions and specifications of the machine:

Length of arbor, inches	54½
Length of journals, inches	1 9/16
Diameter of arbor, inches	1½
Diameter of end collars, inches	6
Diameter of pulleys on arbors, inches	5¼
Floor space required, inches	33¾x25¼
Net weight, pounds	750

The tight and loose pulleys are mounted on the arbor, the latter being mounted on a steel bushing which is fastened to the arbor. The end collars are secured to the pulley with an oil joint and the pulley is oiled sufficiently whether the arbors are turning around or standing still. There is a large door in the back of the frame which can be removed when access to the belt is desired.

A New Perforating Plant in Chicago

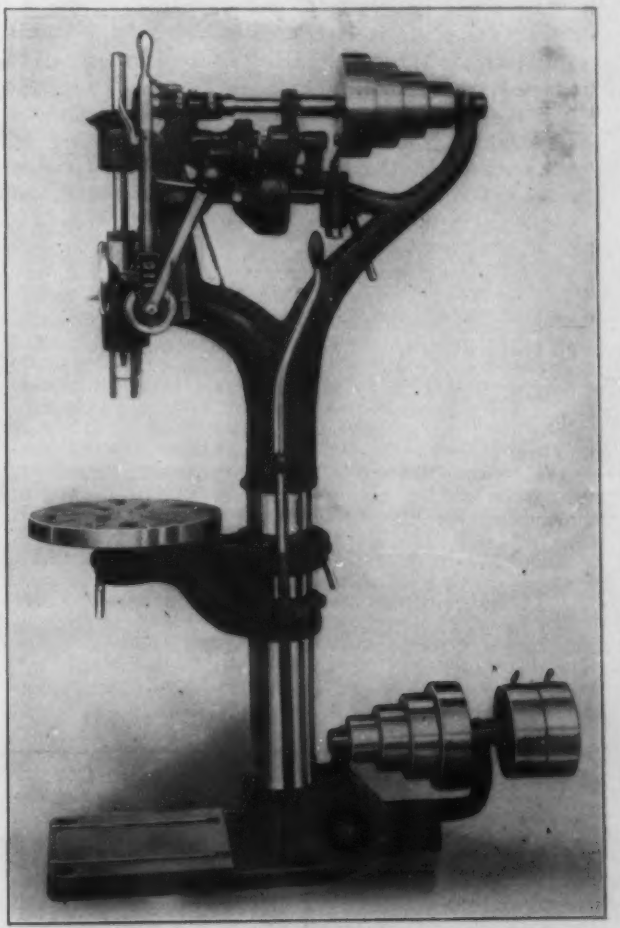
The Chicago Perforating Company, 2445 West Twenty-fourth place, Chicago, has been organized to manufacture perforated screens of all kinds and in all metals. H. C. Finlay, the president, and Guy Clark, secretary and treasurer, were both formerly of the Scully Steel & Iron Company. A. W. Cutter is vice-president. The company has completed its plant at the above address, the main building of which is 124 x 152 ft. It is located on the Chicago, Burlington & Quincy Railroad, with switch track into the works.

The plant is equipped with a wide range of tools, from the lightest type of automatic machinery for perforating tin, copper, brass and sheet steel, up to the heaviest equipment for similar work in steel plates. One of the tools for heavy work is a special punch press with 6-ft. gap for punching steel plates 1-in. thick and making perforations as large as 1 ft. in diameter. The company also has special facilities in its shop for rolling screens of any diameter up to 12 ft. long, including a full equipment for the manufacture of dies. Being in close touch with the iron and steel warehouse stocks of Chicago and jobbers in all classes of rolled metal, the company announces that it can give quick shipment on any sized order for perforated metal.

The Rockford Positive Geared Drill Feed

A new style of positive geared feed for drills has been developed by the Rockford Drilling Machine Company, Rockford, Ill., and is being employed upon all the drills of this company over 20 in. The smallest size of machine to which this feed is applied is illustrated herewith and it will be noticed that in general construction it does not differ very markedly from the 14-in. drill of this company which was illustrated in *The Iron Age*, March 30, 1911.

The power for the feed mechanism is derived from the top shaft which also carries the four-step cone pulley.



A New Type of Positive Geared Feed Applied to the 20-In. Drill Built by the Rockford Drilling Machine Company, Rockford, Ill.

Power from this shaft is transmitted through a train of two gears to an intermediate shaft, upon which there is mounted an idler gear that can be made to mesh with any one of a cone of four gears. As these gears are engaged on the periphery they can be tumbled into mesh while the drill is running and any one of the four feed changes which range from 0.004 to 0.015 in. per revolution of the drill spindle are instantly available. In applying this type of feed to the larger sizes of drill the mechanism for shifting the gears has to be slightly modified to suit differences in the design of the tools.

An Australian invention to overcome corrosion and pitting in metals, especially boilers, due to electric chemical action of ingredients in water with which they are brought in contact, appears to have met with success in Sydney. It introduces, by dynamos, weak electrical currents on the metals intended to be protected, thus neutralizing the galvanic action of the corrosive substances contained in the water. The process was recently tested by the professor of physics at Melbourne University on metals immersed singly and in connected pairs in sea water, both hot and cold, and in dilute acids. He reported that all hurtful galvanic action was suspended by a small expenditure of electrical power.

The Lukens Iron & Steel Company, Coatesville, Pa., made an average output ranging between 70 and 75 per cent. of full capacity during the month of May.

The Machinery Markets

The machinery markets on the whole are uneventful. Interest is centered in the American Railway Master Mechanics' convention at Atlantic City, which opens to-day. The machinery exhibit arranged is the largest on record for a meeting of this kind. The machine tool trade particularly is well represented. Inquiries for machinery have fallen off in New York and orders are not coming in very heavy. The situation has bettered in Philadelphia, where some comparatively good contracts have been closed and the business was distributed. Miscellaneous sales of machine tools, in addition to some good railroad business, have helped the Chicago market and some further railroad inquiries remain unfilled. Two small lists for industrial plant equipment have appeared in Cleveland; sales in that market as a rule have been limited to single tools. Trade is dull in Cincinnati, although the demand for wood-working machinery is improving. In Detroit the trade is interested in the announcement that the Lozier Motor Company has increased its capital stock $1,000,000, and will spend most of the money for manufacturing extensions. The market is reported steady in St. Louis, but makers and dealers there could take care of considerably more business than they are getting. Conditions are on the mend in Texas and orders that were held up because of the Mexican troubles are now being filled. A good demand for contractors' equipment and small power plants exists on the Pacific coast. This material is largely needed for irrigating enterprises. Heavy shipments are being forwarded to Nome and other Alaskan mining centers.

New York

NEW YORK, June 14, 1911.

The machinery demand is somewhat disappointing. New inquiries are scarce and outside of the railroad business now in sight there is little to occupy the attention of machinery men. Buyers seem somewhat reluctant to close up on inquiries and many specifications sent out seem to be prompted by curiosity as to selling terms rather than as a desire to make purchases. Some excellent Government contracts are coming up and a list of machinery is in course of preparation for the Government Arsenal at Watertown. A railroad enterprise which promises to result in business is that of the Southern Railway Company, 30 Church street, New York, to build shops at Macon, Ga. About 100 acres of land have been bought there in the name of a subsidiary of the Southern Railway Company and repair shops which will give employment to about 2000 men are to be built. The details are being arranged at the Washington office of the company under the direction of W. W. Finley.

The Governors of the Machinery Club of the City of New York at a recent meeting elected the following officers: President, George H. Post, Standard Coupler Company; vice-president, W L. Saunders, Ingersoll-Rand Company; secretary, Fred Stadelman, Wellman-Seaver-Morgan Company.

In the annual report of the Westinghouse Electric & Mfg. Company the statement is made that at the expiration of the lease of the property occupied as an iron foundry at Pittsburgh the works will be abandoned. Plans have been completed for the erection of a new foundry at Trafford City, about six miles east of the main factory at East Pittsburgh. Approximately 63 acres of land have been acquired for this and other possible purposes, at a total cost of $184,500. The company has further acquired, for the purpose of insuring communication between the proposed new foundry and its plant at East Pittsburgh, 60 per cent. of the capital stock of the Interworks Railway Company, owning and operating a line of railway between East Pittsburgh and Trafford City. Plans have been prepared for the erection of foundry and pattern buildings at Trafford City, at an aggregate cost of approximately $1,250,000.

The Republic Metalware Company, Buffalo, N. Y., is making an addition to its main factory building which will be equipped largely with machinery moved from other departments. One section will contain the machine shop and it is probable that some additions will be made to the machine tool equipment, including lathes, shapers, etc.

The International Steam Pump Company, in addition to obtaining a water-works contract for the city of Buenos Ayres, amounting to over $1,000,000, which was recently mentioned in *The Iron Age*, has also been awarded a contract to furnish $700,000 worth of pumping machinery for the city of Buffalo, and will build a $400,000 pumping station in Cairo, Egypt.

The Farman Company of America, 37 East Twenty-eighth street, New York, is investigating several sites in the West with a view to locating a plant for the manufacture of the Farman aeroplanes. The company has prepared plans for buildings and equipment and will announce them as soon as a site has been definitely decided upon.

The Crescent Tool Company, Jamestown, N. Y., manufacturer of special machinery and hardware specialties, will build a two-story brick addition, 50 x 132 ft., to its plant.

The Thomas Auxiliary Spring Company, Canisteo, N. Y., has been incorporated with $10,000 capital stock and will engage in the manufacture of automobile springs, shock absorbers, etc. The incorporators are Charles L. Thomas, Canisteo, and Ernest C. Coulton and Alex. Fleming, Buffalo.

The new foundry building to be erected by the Syracuse Malleable Iron Company on North Geddes street, Syracuse, N. Y., will be 150 x 200 ft., and will cost approximately $25,000.

The Ellis W. Morse Company, Binghamton, N. Y., has been incorporated with a capital stock of $125,000, to manufacture machinery, etc. Ellis W. Morse, Geo. A. Kent and W. J. Callin, Binghamton, are the incorporators.

John D. Meehan, Hendrick Building, Syracuse, will build a plant for the manufacture of brick and tile, consisting of a one-story building of brick and steel construction to cost, with equipment, about $56,000.

The David N. Gallen Company has been incorporated at Waterloo, N. Y., to manufacture structural iron, etc., and deal in steel, iron and other metals. The company has a capital stock of $50,000. The incorporators are D. N. Gallen, Wilkes-Barre, Pa., C. E. Ramirex and P. Fritz, New York City.

The United States Woodworking Company, Buffalo, N. Y., has been incorporated with a capital stock of $100,000. The new company will take over and continue the business of the Buffalo Auto-Body and Trimming Company, at 106-108 The Terrace, manufacturer of automobile bodies and tops, and will in addition manufacture chairs, tables, etc. The directors are Henry Lewis, James E. Morgan, A. Panimo, Chas. J. Walkam and Chas. M. Plant.

The Monarch Paper Box Mfg. Company has been incorporated with a capital stock of $10,000, and will establish a plant for the manufacture of paper boxes and cartons. The directors are Bennett Nussbaum, Jacob Nussbaum and Henry Glasstone.

A plant is to be established at Elmira, N. Y., by the Castle Lamp Company, Amesbury, Mass., if plans projected are carried out. The plans include a building 60 x 300 ft., three stories. John N. Willys and Walter Stewart, of the Willys-Overland Automobile Company, are also interested in the new plant.

The Delaware, Lackawanna & Western Railroad will build a 10-stall roundhouse of brick and concrete construction with a 90-ft. turntable, at Elmira, N. Y. Geo. H. Burgess is chief engineer, Albany, N. Y.

The Syracuse Lighting Company will build and equip new stations at East Syracuse, Jamesvile, Liverpool and Manlius, N. Y. The Public Service Commission has authorized the company to issue $456,000 bonds for the general extension and improvement of its electrical and gas departments.

The Rome Mfg. Company, Rome, N. Y., will build an addition to its plant of brick and steel, 40 x 160 ft., two stories, for the manufacture of metal ware.

The Skinner Engine Company, Erie, Pa., will double its present foundry capacity by the erection and equipment of an extension foundry building on a site recently acquired for the purpose.

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Philadelphia

PHILADELPHIA, PA., June 14, 1911.

There has been a shade better volume of business placed with local machinery merchants during the past week, due in a measure to the placing of several contracts which had been under consideration for some time. These orders have usually been divided among several merchants and manufacturers, and have therefore not materially increased the sales of any one concern. The sale of a planer, radial drill, grinder and several small tools for the equipment of a repair shop, closed by one of the local merchants a few days ago, is considered pretty good business in these days of single tool propositions. There is still an absence of any demand from the railroads in this district. Industrial plants generally are less actively engaged; a number are operating on a restricted basis, while some are practically idle. The local locomotive builder is handicapped by difficulties with its union labor, but is not particularly inconvenienced, as orders for delivery at this time are not very urgent. The demand for second-hand tools and machinery has not been urgent; in some lines there is almost a total absence of inquiry. Second-hand boilers and engines are not in very active demand, although manufacturers of new equipment of this character are figuring on considerable work. There is but a light inquiry for either steel or iron castings, and many of the foundries in this district are operating on short time.

The Harrisburg Boiler & Mfg. Company, Harrisburg, Pa., is reported to have placed orders for the major portion of the equipment required for the addition to its plant. The business is said to have been distributed among a number of merchants and manufacturers.

The William Steele & Sons Company has begun operations on the addition to the plant of the North Brothers Company, Lehigh avenue and Philip street, this being a reinforced concrete building, the general dimensions of which are about 34 x 100, with a wing about 35 x 68 ft. The building will be used largely for warehouse purposes, and we are advised that no machinery equipment will be required.

The Treadwell Engineering Company, Easton, Pa., now has its iron foundry at its new plant, at Easton, in operation, and expects to operate its new steel foundry about July 1. As soon as this new department is in full operation work at its present plant at Lebanon, Pa., will be discontinued.

The Harvey Fibre Carpet Company, Trenton and Allegheny avenues, has under construction a new power house, 42 x 54 ft., for which Charles W. Denny has the contract. The major portion of the new equipment for the plant has already been contracted for.

A permit has been taken out by Cramp & Co., contractors, for the erection of a large manufacturing plant for the American Can Company, previously mentioned, at Palmer, Beach and Allen streets. The building will be five stories, of reinforced concrete, erected on a lot 87 x 343 ft. Pile foundations will be extensively used, these being placed, it is reported, by the Raymond Concrete Pile Company.

The Board of Awards, Baltimore, Md., James H. Preston, president, will take bids until June 28 for furnishing, delivering and erecting complete, to the Water Board of Baltimore, one 30,000,000-gal. vertical triple expansion pumping engine, two batteries of two boilers each, the necessary steam piping between engines and boilers and the economizers for heating the feed water, for the Mount Royal Pumping Station, Baltimore, Md., according to specifications, which may be obtained at the office of the water engineer, Alfred M. Quick, City Hall, Baltimore, Md.

A new charter has been granted the Baldwin Locomotive Works under the title of the Philadelphia Locomotive Works, under the laws of the State of Pennsylvania. The nominal capital stock is $50,000. It is understood that the actual capital stock will be $50,000,000, which will represent an increase of $10,000,000 on the capitalization of the old concern. While the new company will virtually take over the old one and operate the plant, the identity of the Baldwin Locomotive Works, Inc., as an organization, will be maintained. The incorporators named in the application are Rudolph Ellis, C. S. W. Packard, Eckly B. Cox, Jr., Alfred C. Harrison and Herman Dercum. Particulars regarding the organization of the new concern are not available.

Dodge, Day & Zimmerman, engineers, report new developments in industrial work quiet. They are busy, however, on work in hand and have recently completed a layout for a new plant for the International Sprinkler Company of this city, also for extensive additions to the plant of Goldie & McCollough, Gault, Canada, and for a new plant for the Oxfibre Brush Company, Frederick, Md., which proposes to erect a new plant at Albany, N. Y.

The Philadelphia & Reading Railroad has awarded a contract to the McClintic-Marshall Construction Company for the erection of a new creosoting plant for the treatment of ties at Port Reading, N. J. A sawmill outfit will be installed and a new round house will also be erected.

The American Hoist & Mfg. Company, Hamburg, Pa., is contemplating the erection of a plant of larger capacity than its present quarters with a view to increasing its manufacturing scope to include that of cranes, trolleys and other various devices.

New England

BOSTON, MASS., June 13, 1911.

The market is an uneventful one. No lists of any moment have been received by the dealers; in fact, business continues to be very quiet. Indications are that the vacation periods in industry generally will be fully as long as usual, and in some cases longer, as has been demonstrated in announcements already made by shops and factories. The Interstate Commerce Commission has extended for three months longer the 72-hour demurrage rule for New England, the purpose being to examine more carefully the statistics governing conditions in this territory. As an alternative is the 48-hour rule, in force in practically all the rest of he country. Shippers here are gratified at the still remaining possibility of continuing under the old system.

The Critchley Machine Screw Company, Worcester, Mass., manufacturer of special screw machine work in iron, steel and brass, has purchased a tract of land at Worcester, on the line of the Worcester & Norwich division of the New York, New Haven & Hartford Railroad, and plans to erect immediately a factory 50 by about 300 ft., one story and basement. The structure will be of brick and granite, with steel frame and cement foundations, the purpose being to have it fireproof throughout. The business has grown very rapidly from the time of its establishment by J. Verdet Critchley, about five years ago, when he installed two machines in a small space on Union street. The original quarters were soon outgrown, and the business was moved to Beacon street, where new space has been added from time to time. At present some 80 men are employed, manufacturing screw machine products at the rate of 30,000,000 pieces per year. In addition to its own growth, the company has recently purchased the screw machine department of the John L. Parker Company, Worcester, and is now running it in space rented in the latter company's factory on Jackson street. Mr. Critchley, who is the sole owner, states that he will probably require additional equipment, including a milling machine and toolroom lathes. It is not expected that additions will be made to the machinery of the automatic screw department immediately, although additional space has been provided to permit of future growth. The factory is extremely busy, orders equalling the maximum producing capacity.

The C. G. Garrigus Machine Company, Bristol, Conn., has put on the market a surface grinder known as No. 1, type A, which is designed primarily for grinding dies for presses and stamps. The machine has two wheels, one working with a tool rest, the other with an adjustable table.

The Terry Steam Turbine Company, Hartford, Conn., is to build a large addition at its shops, the purpose being to double the present capacity. The Terry turbine is extensively used for driving centrifugal pumps, generators, fans, etc., and it has become necessary to provide increased manufacturing facilities. The present shop was occupied about two years ago.

The International Silver Company, Meriden, Conn., has started the erection of a four-story, brick addition, on the west side of its main plant.

The Bosch Magneto Company has extensive plans for additions to the factory at Springfield, Mass., which was only recently completed. In a general way it may be stated that the enlargement would triple the present large capacity. However, an obstacle exists in the presence in the neighborhood of works which emit

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odors to which the Bosch company objects, on the ground that conditions in its plant are made unpleasant. The municipal authorities of the adjacent city of Chicopee, in which the objectionable plant is located, have been appealed to, and it is believed that the question will be settled to the satisfaction of the company.

The Peavey Mfg. Company, Bangor, Maine, is to remove its business to Brewer, the chief reason being a desire to be directly upon a railroad. A concrete factory will be erected, the main building 50 x 100 ft. and a wing 50 x 50 ft. The structure will be made absolutely fireproof. The window frames and sashes and the interior equipment generally will be of steel, so that nothing will be present to burn. Much attention will be given to lighting the plant, plans calling for 100 windows, each averaging 18 ft. in height. The company is a successor to the Bangor Edge Tool Company, and manufactures cant-dogs, axes and edged tools. The output of the new factory at the beginning will be between 30,000 and 40,000 cant-dogs and 1,000 dozen axes annually. The company states that it is not in the market for equipment at this time.

The Otis Elevator Company has decided, according to an announcement made at Springfield, Mass., to abandon its factory in that city, the purpose being to concentrate manufacturing in its larger works. The Springfield business was established by the Elektron Mfg. Company, which was absorbed into the Otis company six years ago. No announcement is made of the plans of the Sultan Motor Company, which has been manufacturing motor trucks at the Otis plant, but it is thought at Springfield that the business will be discontinued.

The Bridgeport Screw Company, Bridgeport, Conn., has awarded a contract for its factory building in that city. It will be 70 x 400 ft., two stories, and will cost approximately $100,000. The Bridgeport Screw Company is headed by W. H. Farrell, formerly president and manager of the Dominion Wire Mfg. Company, Montreal, a subsidiary of the Steel Company of Canada. He recently resigned those offices to become president of the new Bridgeport company.

The Brosnihan Wrench Company, Worcester, Mass., manufacturer of a patent wrench, has gone into bankruptcy.

A large power development is under way at Elliottsville, Maine, on what is known as Big Wilson Stream. A 30-ft. dam will give a head of water sufficient to operate a large electric generating plant. The power will be used in slate quarries and sawmills of Monson, Maine.

Additions to general manufacturing industries in New England include the following: A. & E. Henkels, Bridgeport, Conn., weave shed, addition 60 x 190 ft.; Bridgeport Elastic Fabric Company, Bridgeport, Conn., addition 90 x 122 ft., two stories; New Haven Pulp & Board Company, New Haven, Conn., five-story factory, 67 x 131 ft.; Bay State Thread Company, Springfield, Mass., an addition 40 x 54 ft., two stories; Rhode Island Glass Company, Central Falls, R. I., glass factory in that city.

The Brockton Factory Association, Brockton, Mass., has been organized to erect a factory building at a cost of $100,000, to be rented for manufacturing purposes. The city is an important shoe manufacturing center, and doubtless the tenants will be chiefly confined to that industry.

The Lamb Knitting Machine Company, Chicopee Falls, Mass., manufacturer of textile machinery, is about to begin the erection of extensive additions and alterations to its works, including a large building, four stories and basement. It is planned to have the building ready for occupancy in the fall.

Preliminary work will begin immediately on the shops which the Boston & Maine Railroad is to establish at North Billerica, Mass. The details of the plant are not yet available, but it is known that some $3,000,000 will be expended on the project, including a very large amount of machine tools and other equipment.

Cincinnati

CINCINNATI, OHIO, June 13, 1911.

Business from the automobile manufacturers, which gave promise of reviving several weeks ago, is now exceedingly dull, and there is no prospect of its being better soon. As a consequence machine tool builders report very few orders from Ohio, Indiana and Michigan territory, but state that there is some scattered buying from the general trade in other parts of the country. Present purchasers, however, seem willing to accept second-hand and the lower priced tools. There has been some further curtailment in working time, but the total number of men reported to have been laid off has probably been exaggerated.

Punching and shearing machinery is moving fairly well, and at least one of the leading manufacturers of this class of machinery has found it necessary to work a full force and on full time. Woodworking machinery continues to show improvement and the smaller units of electrical equipment are also in demand. It is further reported that a nearby manufacturer of paper-making machinery has its factory working on rush time.

The M. Hertenstein Company, Columbus, Ohio, stove manufacturer, is reported to have plans completed for enlarging its molding room, as well as making other improvements to its plant.

Samuel Hannaford & Sons, architects, Cincinnati, are drawing up plans for a new factory to be erected for the Murdock Mfg. & Supply Company, whose plant was recently destroyed by fire. The company manufactures and deals in plumbing supplies.

The H. C. Wood Company, Cincinnati, ice manufacturer, has increased its capital stock from $50,000 to $200,000. The company is now building a large ice plant in Norwood suburb, and, it is rumored, has tentative plans for the erection of another nearby plant.

The American Drying Machinery Company has been incorporated at Portsmouth, Ohio, with $500,000 capital stock. The incorporators are William Miller, A. H. Schupp, H. J. Tate, H. J. Grimes and O. W. Newman. The company's plans have not yet been made public.

Work on the new addition to the plant of the Lodge & Shipley Machine Tool Company, Cincinnati, is progressing rapidly, and the company expects to occupy the building before the fall season begins.

The Cincinnati Business Men's Club held its regular annual outing at the Laughery Island Club June 14. About 300 members and their friends attended.

The Cook Motor Company, Delaware, Ohio, has increased its capital stock from $50,000 to $100,000, and it is stated will add to its present facilities.

The Sheffield Tool Steel Company, 60 Elm street, Cincinnati, is a new partnership formed to handle all kinds of tool steels. A stock will be carried to fill rush orders. The members of the new firm are C. F. Mackinnon, A. D. Herking and E. J. Schmidt.

Work has been commenced on the new six-story factory building for Lowe Bros., Dayton, Ohio.

Cleveland

CLEVELAND, OHIO, June 13, 1911.

In some lines of machinery inquiries show considerable improvement. Crane builders report that they are now figuring on a good volume of business, the bulk of which has come out during the past two weeks. The demand for water wheels for new plants is quite active. Inquiries for mining machinery have picked up somewhat.

The demand for machine tools shows practically no change. The market is quiet, sales being limited largely to small single tools. Two new inquiries were received from Ohio manufacturing plants during the week for machine tool equipment, each list amounting to about $5,000. Considerable business that has been pending for some time is still being held up. Railroads in this territory are buying practically nothing in machinery lines.

The foundry trade continues quiet. Some plants are well filled with work, those in the smaller cities in this vicinity being generally better off in this respect than the local foundries. It is estimated that the foundries in this section are being operated on an average of about 60 per cent. of their capacity.

The Cleveland Electric & Machine Mfg. Company, Cleveland, Ohio, has been incorporated with a capital stock of $25,000. This company is controlled by the interests in the Schwenger-Klein Company, dealers in butchers' and packers' supplies. The latter company recently secured control of the business of the Cleveland Meat Chopper Company, which will be continued under the new corporation, and new lines will be added. The company will make a full line of butchers' and grocers' electrical machinery. The company has leased a large 4-story building at 716-720 Bolivar road, which will be used as a plant.

The American Fork & Hoe Company will enlarge its plant at Jackson, Mich., by the erection of a machine

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shop. The building will be of reinforced concrete, 60 x 200 ft. and three stories. Plans are being prepared by Anton Burchard, engineer, Cuyahoga Building, Cleveland.

Four crane builders in this territory have submitted bids to the government for the erection of two floating pontoon cranes, one for Boston and the other for the Hawaiian Islands. This is the largest crane inquiry that has come out in some time. The contract will amount to about $600,000.

The Superior Metal Products Company is the name of a new concern that has established a plant in the Beal Building, Lodi and North streets, Elyria, Ohio, for the manufacture of metal stampings and doing brass and nickel plating and general machine work. An all-steel kitchen cabinet will also be made. H. E. Hall, formerly with the Sterling Stamping Company, Wellington, Ohio, is manager.

A power station for a new high-pressure water system will be built in Toledo, Ohio.

The Goodyear Tire & Rubber Company, Akron, Ohio, will enlarge its plant by the erection of a five-story building, 30 x 60 ft., which will be used for the manufacture of various rubber products.

The Erie Stove Mfg. Company, Erie, Pa., has completed plans for the enlargement of its plant, involving an expenditure of about $25,000. This will enable the company to increase its output of gas stoves and heaters.

The Peerless Paper Company, Dayton, Ohio, will erect a new three-story brick paper mill.

The Clark Grave Vault Company, Columbus, Ohio, has been reincorporated, increasing its capital stock from $200,000 to $700,000. The company will enlarge its Columbus plant and will build a new plant at Des Moines, Ia. The building of other plants in Western cities is also under consideration. The company manufactures a patent burial vault and caskets and undertakers' supplies. H. D. Clark is president and A. F. Beck secretary.

It is reported from Youngstown, Ohio, that the United States Foundry Company will move from Pittsburgh to that city, having purchased the plant of the Girard Foundry Company and adjoining property. A new building, 35 x 125 ft., will be erected.

The Superior Mfg. & Mill Company, Springfield, Ohio, has been incorporated with a capital stock of $50,000, and will fit up a plant on East street in that city for the manufacture of gas and gasoline engines, pumps and feed mills. George C. Lynch, the temporary president of the company, has purchased the business of the O. S. Kelly Mfg. Company, Iowa City, Ia., and the machinery of that company is being moved to the Springfield plant.

It is reported from Elyria, Ohio, that the Kennedy Mfg. Company, of which John V. Kennedy, of Cleveland, is president and manager, will build a plant in that city, 50 x 200 ft., for the manufacture of plumbers', steam fitters' and gas fitters' supplies.

Detroit

DETROIT, MICH., June 12, 1911.

Makers of automobiles and automobile accessories are experiencing a business lull, and this is reflecting on the machinery demand. Factory construction work is active, and this may develop a call for machinery later. The foundries are doing well just now and there is a good demand for structural steel. Machinery men are interested in the recent increase in the capital stock of the Lozier Motor Company to the extent of $1,000,000. The increase will be used in enlarging the company's plant, especially in the department given over to the manufacture of power trucks. A machine tool list can be looked for from this source in the near future.

The Robert Mitchell Company has been organized in this city and will manufacture a tape-sealing machine of special design. The company has a capital stock of $30,000.

Following the lead of other railroads in this State in making improvements in their rolling stock, the Pere Marquette will expend $1,023,000 in the purchase of new equipment. The company will buy 12 first-class passenger coaches, two combination mail and baggage cars and 50 engines, five of which will be for passenger service, 35 for freight service and 10 switch engines.

It is reported that the Quinn Mfg. Company, Kalamazoo, Mich., manufacturers of plumbers' supplies, has purchased a factory site here, and will shortly erect a large factory building.

The C. R. Wilson Body Company is to erect a large addition to its factory, and will also make extensive alterations.

The Schullenberg Mfg. Company will soon begin work remodeling its building which was recently destroyed by fire. New equipment to replace that destroyed will be purchased.

A new Detroit concern is the Payograph Company, which has incorporated with a capital stock of $300,000. The company will manufacture a machine which is designed to facilitate the handling of payrolls in large factories. Nelson C. Oviatt and Thomas S. Sprague, with offices in the Ford Building, are the principal backers of the concern.

The Ideal Commercial Car Company has filed articles of incorporation with the Secretary of State. The company has a capital stock of $10,000. J. C. Sage is the principal stockholder.

Plymouth, Mich., is to be the location of the Bennett Mfg. Company, incorporated last week with a capital stock of $20,000. The company will make toys and toy games.

The Ideal Gas Engine Works, Lansing, Mich., with a capital stock of $150,000, which recently took over the Ideal Motor Company, will continue its business at present in quarters of the Michigan Screw Works. As soon as a site can be secured, however, a new plant will be erected of twice the size of its present quarters.

The Austin Automobile Company, Grand Rapids, Mich., as the result of several offers, will move its plant to South Norwalk, Conn. The offers include a free site and water and power rights.

The city of Cadillac, Mich., has subscribed $100,000 in stock to secure the location of the Otsego Chair Company, Otsego, Mich. A new plant will be built and $60,000 will be expended on the building and equipment.

North & Bradshaw, contractors, will erect a new plant for the Fleming Milk Products Company, Jackson, Mich. The structure will be 30 x 70 ft., two stories, of brick construction.

The Holland Umbrella & Specialty Company has been incorporated to take over the Barnes-Baker Mfg. Company, St. Joseph. The new concern, which includes B. D. Keppel, Holland, has a capital stock of $30,000 and will make over the Holland Skating Rink into a suitable plant.

The Michigan Crankshaft Company, Muskegon, as the result of a large increase in business, will raise its capital stock from $20,000 to $50,000 for the purpose of expansion.

The Frukey Mfg. Company has filed articles of incorporation with the Secretary of State. The company has a capital stock of $5,000 and will manufacture specialties.

The Michigan Salt Company has been incorporated with a capital stock of $25,000. The salt deposits are found below this city on the Detroit River.

The Bay City Sugar Factory is to spend the sum of $103,000 in increasing the capacity of the plant, which will be increased from 700 tons per day to 1400 tons. Similar improvements are to be made at Alma, Carrollton and Croswell.

A. C. Runyon and Durrel Tripp, well-known Allegan merchants, have asked the City Council of Allegan for a franchise to build and operate an artificial gas plant. No trouble will be experienced in securing the privilege.

The Citizens' Electric Light & Power Company, Adrian, Mich., is planning several improvements, among which is the erection of a 175-ft. smokestack and a new boiler house 23 x 50 ft. in size.

The citizens of Croswell, Mich., have voted in favor of a bond issue of $10,000, the proceeds of which will be used for the erection of a new standpipe and for making other improvements in the water-works system.

The Angle Steel Company, Otsego, Mich., is to be reorganized with a capital stock of $25,000. The company for some time past has been contemplating this action to enable it to increase its facilities to handle properly an ever-increasing business. The new officers of the company are C. E. Pipp, president, and J. H. Boswell, secretary.

The Michigan Washing Machine Company, Muskegon Heights, Mich., is erecting an addition 50 x 100 ft. to carry on its extensive and growing business.

The taxpayers of the city of Bad Axe, Mich., will

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vote on June 12 on a proposition to bond for $11,500 to extend the waterworks system.

The St. Johns Portable Building Company, St. Johns, Mich., will shortly erect another building to be used in increasing the capacity of the plant.

Kerschnez Bros., Elderon, Wis., have made preliminary arrangements for the erection of a saw and planing mill at Skanee, Mich.

William A. Markey, Midland, Mich., has made application to the Midland County Supervisors for permission to erect a steel and concrete power dam across Pine River. The dam will be used for generating electricity and supplying water-power.

The Fletcher Paper Company, Alpena, Mich., is about to make extensive improvements in its plant, including a concrete building, 70 x 130 ft., for the conversion of pulp wood to paper.

Charles E. Duryea, of the Duryea Auto Company, Reading, Pa., states that the removal of the plant to Saginaw, Mich., will begin this week. The undertaking is a large one and will occupy some time. A plant is being erected at Saginaw for the new concern, which will be completed by July 10. The company has a capital stock of $300,000.

The Lewis Geer Foundry plant at Ypsilanti, Mich., was badly damaged by lightning last week. It will be some time before operations can be resumed.

Kalamazoo, Mich., has voted to expend $340,000 for a new central high school and two outlying buildings. The high school will be equipped with a most complete manual training department, including a modern machine shop.

Marinette, Mich., is to have a new industry in the Kreiter Piano Factory. The company will begin operations as soon as machinery can be installed.

Following the recent increase in its capital stock, the Michigan Adjustable Hub Company has opened headquarters in Bay City, and has about concluded negotiations for fifteen acres for a site for a factory. W. T. Woodhouse and Charles Tarolli are the president and secretary, respectively, of the company.

The Chicago Artificial Stone Company, Grand Rapids, Mich., is erecting a building 220 x 440 ft., and will manufacture all kinds of artificial stone products.

Chicago

CHICAGO, ILL., June 13, 1911.

The miscellaneous sales of machine tools in this market during the past week were much more satisfactory than for some time. However, the spotty character of the demand for tools has displayed bright aspects from time to time before without developing any sustained volume of buying and as yet evidence of substantial and permanent improvement is lacking. Several heavy tools were disposed of during the week and a moderately active inquiry for second-hand tools, chiefly lathes and shapers in the smaller sizes, is reported. A large agricultural implement interest which has been installing considerable machinery continues to be an important figure in the market. The Union Pacific Railroad bought last week the lathes and pipe machines on its recent list. Only a portion of this business came to Chicago, most of it being placed in the West. The Chicago, St. Paul, Minneapolis & Omaha branch of the Northwestern system expects to be in the market for several machines in the near future. An unusual coincidence is instanced by a local dealer handling pipe machines who reports that calls for a total of seven of these machines have developed from this territory since May 1. The requirements of the American Steel & Wire Company previously mentioned are still unsatisfied.

J. S. Giles & Sons, Chicago, have incorporated with $100,000 capital stock to manufacture dies and machinery. The incorporators are John S. Giles, Carl O. Giles and Guy H. Giles.

Contracts have been awarded by the Chicago Pneumatic Tool Company for the erection of several additions to its plant at Chicago Heights, Ill.

The Rumely-Wachs Machinery Company, Chicago, has been incorporated with a capital stock of $30,000 for the purpose of manufacturing and dealing in wood and iron working machinery. This company has located in the store formerly occupied by the McDowell, Stocker Company and will continue a machinery dealer's business at that location. Sales of the machines on the floor are now being made.

The West End Furniture Company, Rockford, Ill., has awarded a contract for the erection of an addition to its plant 100 x 100 ft.

The Leader Iron Works, Decatur, Ill., is completing extensive additions to its plant and installing considerable new equipment.

The Thomas & Clarke Company, Peoria, Ill., has awarded a contract for the construction of a factory building 110 x 125 ft., five stories and basement. The company is engaged in the manufacture of crackers, cakes and biscuit, for which purpose the most up-to-date equipment will be installed.

The Bar Clay Products Company, Zumbrota, Minn., has under construction between Zumbrota and Wanamingo, Minn., on the Chicago, Milwaukee & St. Paul Railroad, a plant for the manufacture of clay products. The company will be in the market within the next 30 days for structural material and all necessary machinery for the equipment of the plant.

The Northern Iowa Power Company, Fort Dodge, Iowa, recently incorporated, will construct a hydroelectric power plant, contract for which will soon be let.

The Reiss Coal Company, Superior, Wis., has awarded a contract for the construction of a new boiler house to be equipped with four 125-hp. boilers.

The Thilmany Pulp & Paper Company, Kakauna, Wis., is preparing plans for the construction of a pulp mill.

Indianapolis

INDIANAPOLIS, IND., June 13, 1911.

The American Leather Products Company, Indianapolis, has been incorporated with $20,000 capital stock to manufacture products of waste and scrap leather. The officers are E. E. Mitchell, president; M. Ross Masson, vice-president, and Ed L. Selvage, secretary-treasurer.

The Cartwright-Stevenson Mfg. Company, Indianapolis, has changed its name to the Sanitary Cooler Company.

W. W. Mooney & Sons, Columbus, Ind., who operate one of the largest tanneries in the country, are having plans prepared for a large plant at Elizabethtown, Penn.

The Electric Welder Company has been organized at Kokomo, Ind., to manufacture electric welding machines. The directors are Jesse Jackson, F. M. Ruddell and Conrad Wolf.

The Court has directed J. J. Netterville, receiver for the Central Stove and Foundry Company, Anderson, Ind., to sell the company's property after three weeks' notice.

The Indiana Tie Company, Evansville, Ind., manufacturer of railroad ties, has increased its capital stock from $113,000 to $225,000. E. O. Hopkins is president of the company.

Harry W. Richter has been appointed receiver for the Michigan City Sash & Door Company, Michigan City, Ind., on petition of John J. Stevens, the company's president. The liabilities are given at $100,000, and the assets $40,000.

The Economical Generator Company, Montpelier, Ind., has been incorporated with $5,000 capital stock to manufacture heat and power generators. The directors are B. W. Smith, T. C. Neal, I. H. Twibell, L. W. Rawlings and T. J. Driscoll.

W. C. Covington & Co. have been incorporated at Gary, Ind., as general contractors; capital stock, $10,000. The directors are W. C. Covington, D. E. Baxter and O. L. Wildermuth.

The citizens of Cambridge City, Ind., having subscribed for $60,000 of the capital stock, Bertsch & Co., machinists, have decided to decline liberal inducements to move their plant to other cities and will remain at the present location.

The Indianapolis, Chicago & Meridan Railway Company has been incorporated at Indianapolis, with $100,000 capital stock, to build and operate an interurban road between Indianapolis and Chicago. The directors are John C. Billheimer, John A. Shafer, Howard Holton, M. B. Keller and M. J. Moreland. The general offices will be at Indianapolis.

The Commercial Club of North Manchester, Ind., has closed a deal for the location in that city of a concern engaged in the manufacture of wagon skeins. A factory will be built and put into operation as soon as possible.

The Rushville Furniture Company, Rushville, Ind., recently incorporated with $30,000 capital stock, has completed plans for a factory building, 200 x 200 ft., two stories and a total floor space of 60,000 sq. ft. The company is in the market for modern wood-working machinery for the manufacture of furniture.

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The South

LOUISVILLE, KY., June 13, 1911.

Though business in general lines has been rather quiet the past week, a good demand has developed for mining equipment and contractors' machinery. The large number of big construction projects under way locally, many of them involving heavy consumption of reinforced concrete, has not only made way for a good demand for steel reinforcing bars, but also has created a call for equipment of various kinds. Refrigerating plants are also selling better than the average line.

A good deal of importance is attached to the development of zinc and lead deposits which have been located near Marion, Ky., in Crittenden County. The Eclipse Mining Company, in which Edward F. W. Kaiser, Louisville, is interested, has been mining fluorspar in that section, and has lately installed a mill for the separation of the other metals. The Franklin Mining Company is the name of another concern which is beginning development work there, and several other companies are being organized for the purpose. Machinery dealers report the prospect of some considerable sales of equipment in this connection.

The Brandeis Machinery & Supply Company, Louisville, has installed three pumps of the Nye Steam Pump & Machinery Company for the Merrill-Ruckgaber Company, New York, which is constructing a reinforced concrete condenser pit for the Kentucky Electric Company. The capacities of the pumps range from 300 to 800 gal. a minute.

Plans have about been completed by T. S. Hamilton, mechanical engineer of the Mengel Box Company, Louisville, for the new factory to be erected by the company at Winston-Salem, N. C. The plant will cost $100,000, and will be built of reinforced concrete. The machinery will be operated by electric motors, but no general power equipment will be required, as current will be purchased from a local central station. The wood-working machinery will be largely of special designs, and contracts for its construction will be let later on.

Edward T. Minor, of Louisville, plans the erection of a distilling plant at Bingen, La., at a cost of $50,000.

The site for the coke plant of the Wisconsin Steel Company, in Harlan County, Ky., has been laid out by the engineers, and work on it will be begun at once. A force of 500 workmen has been concentrated for the job.

The Brush Creek Coal Mining Company, of which T. E. B. Siler, of Lafollette, Tenn., is president, has leased 400 acres of coal land in Knox County, Ky., and will install a large mining plant.

Samuel Bennett, Middlesboro, Ky., and H. B. Jones, Pineville, Ky., have begun the installation of equipment for a new coal mine in Harlan County, Ky., on the Wasioto & Black Mountain Railroad.

The Cincinnati Cooperage Company has purchased a large tract of timber near Vi, Harlan County, Ky., and will erect a cooperage plant in the near future.

A stave mill of large dimensions is to be built near Harlan, Ky., by the Kentucky Stave Company, of which John B. Lewis is president.

O. S. Keys has purchased the gas plant at West Point, Ky., for $2,000, taking it over from the defunct Indiana & Kentucky Bank of that city. Considerable improvements are planned.

The planing mill of the W. K. Hall Lumber Company, at Fulton, Ky., which was recently destroyed by fire, will be rebuilt. A lot of wood-working and power equipment will be required.

M. E. Thomas, Bowling Green, Ky., has patented a corn planter, and is planning the organization of a company with $25,000 capital stock for the purpose of manufacturing it.

The Waterson Power Saving Company has been incorporated at Bristol, Tenn., with $150,000 capital stock, with J. A. Dickey as president, B. K. Vance secretary and G. M. Turner treasurer. It plans the manufacture of a mechanical device.

F. R. Gamble & Co., have leased a building and will equip a garage and machine shop. Electric motors will be used for the operation of the machine tools.

New equipment will be installed in the plant of the Cookesville Roller Mills, Cookesville, Tenn., the capacity of the mill to be greatly increased. Thomas Allen is superintendent.

The plant of the Southern Lumber & Mfg. Company, Nashville, Tenn., which was destroyed by fire, will be rebuilt, according to the announcement of President J. R. McElwaine. The company manufactures lumber, boxes and mantels.

The Tennessee Stove Company, of which reference to the increase in its capital stock was recently made, plans the installation of a department for nickeling stove fittings. The company's plant is at Chattanooga.

A 120-ton overhead traveling crane is to be installed in the addition to the machine shops of the Atlantic Coast Line Railroad, to be erected at Wilmington, N. C. The addition to the shops will be of steel frame construction.

Four boilers, air compressors and other equipment will be required by the Youngville Sugar Company, Youngville, La., which will spend $100,000 this year in improvements which are expected to double the capacity of the plant. The contract for most of the equipment has been let to the Paine & Joubert Machine & Foundry Company, New Orleans.

The Lafayette Water & Light Company, Lafayette, La., is in the market for boilers, pumps and engines. Address W. L. Byres, superintendent.

Bids will be closed June 16 for a lot of new equipment to be required in connection with the new electric-light plant of Tupeles, Miss., for which R. C. Huston, of Memphis, is engineer.

A 30-year franchise for a water works and an electric-light plant is to be disposed of July 1 by the municipality of England, Ark.

A considerable amount of equipment is to be purchased by the Helena Electric & Gas Company, Helena, Ark. The engineers for the company are the Scofield Engineering Company, Philadelphia, Pa. The machinery to be purchased includes four 300-hp. boilers, three 500-kw. turbines and three 300-kw. rotaries.

The Illinois Central Railroad plans improvements in water works at McComb, Crystal Springs and Brookhaven, Miss. In addition to laying down a lot of pipe, a pump house will be erected at Crystal Springs.

The Caddo Window Glass Company, Shreveport, La., is in the market for power equipment, including a boiler, an engine and dynamo.

A refrigerating plant is to be installed by the Roseland Veneer & Package Company, Roseland, La. E. D. Wagnalls is secretary and treasurer.

St. Louis

ST. LOUIS, MO., June 12, 1911.

The machinery market shows no particular activity at the present time, though there is a good, steady business being done. It is not by any means up to the capacity of the dealers, who, however, believe that the necessities occasioned by depreciation spread over the long dull period which has prevailed will of themselves improve business before long. The inquiries that are coming seem to indicate a tentative preparation among manufacturers to put themselves in possession of the latest information, ready for any development that demand may put upon them, but no contracts are being made that are of particular importance.

The Metal Pole Post Company has been incorporated at Kansas City by C. A. Thompson, E. S. Winston and Sell J. Mead, with a capital stock of $50,000. A plant is to be installed for the manufacture of a patent device, a substitute for wooden poles, posts, etc.

The What Cheer Mining Company, Joplin, Mo., has been incorporated with $50,000 capital stock by H. Connelly, D. B. Perkins and F. L. Williams. A complete mining machinery outfit is among the plans of the new corporation.

The Kansas City Engine Works, Kansas City, Mo., has been incorporated by A. W. Calkins, J. E. Elliott and A. D. Elliott, with $100,000 capital stock. The company will establish a plant for the manufacture of engines and also for repair work.

The Morgan, Woodson, Bahn Mfg. Company, St. Louis, has been incorporated by D. E. Morgan, W. C. Woodson and A. D. Bahn, and will establish a planing mill, as well as install other machinery for the manufacture of wooden building material.

The Leggitt & Platt Spring Bed & Mfg. Company, operating three plants, one of them at Carthage, Mo., has decided to remove to Windsor, Ont., and to consolidate its factories there.

The University of Missouri, Columbia, Mo., has decided upon the construction this summer of a new engineering shop, which will be fully equipped with

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machinery for the use of the students. The building will cost $15,000 and the machinery as much more.

The Isolated Steam Heating & Maintaining Company, St. Louis, has been incorporated by Walter N. Fisher, John Schuedding and Edward Schuedding, to manufacture, install and to repair heating apparatus.

The Leeper Automobile Company, St. Louis, has been incorporated by Oscar W. Schmidt, Stewart B. Leeper and J. Leeper to manufacture automobiles and to operate a repair shop.

The Wrought Iron Range Company has closed its deal for a new site in the western part of St. Louis, and will remove thereto as soon as buildings can be constructed and equipped. The new plant will be much larger and equipped with much additional machinery. The tract to be covered by the buildings will be twelve acres. The plans for the new plant are now being worked out by architects.

The St. Louis Briquette Machine Company, St. Louis, with $40,000 capital stock, has been incorporated by David R. Francis, James E. Rutledge, Gustave Komarek, Michael B. Nalon, John Scullin and Charles Gilbert to manufacture machinery of all kinds, but especially a patented machine for the compression of coal dust into merchantable briquettes.

The North Arkansas Power Company, Berryville, Ark., has been incorporated with $100,000 capital stock for the establishment of a power plant at Berryville. The incorporators are J. R. Neff, E. H. Ingram, E. D. Munger and W. D. Wilton.

The Justrite Vacuum Cleaner Company, Bloomington, Ill., has been incorporated with $25,000 capital by Lewis C. Walter, Burdette C. Gilmore and A. W. Rigby. A plant for the manufacture of vacuum cleaners will be installed.

The Eisenstadt Jewelry Company, St. Louis, has increased its capital stock from $400,000 to $1,000,000, the increase to be utilized in the extension of the manufacturing end of the business.

The Hannibal Milling Company, Hannibal, Mo., with $60,000 capital stock, has been incorporated by George G. Dubach, O. M. Friend and A. K. Dubach. A new mill is to be built and equipped at once.

The John Deere Plow Company has purchased a lot of 40 ft. front adjoining its St. Louis carriage manufacturing plant, and will build and equip a four-story addition to its present structure for the manufacture of carriages, etc.

The Witwer Motor Car Company, with $25,000 capital stock, has been incorporated at Kansas City, Mo., for the manufacture of motor cars, by Frank Witwer, J. D. Welsh and Louis E. Loechler.

The Barnes Mfg. Company, with $25,000 capital stock, has been incorporated in St. Louis by E. R. Barnes, F. J. Bonskokski and E. W. Hughes. It will build its own plant.

The City Council of Herington, Kan., has engaged Burns & McDonnell, Kansas City, Mo., to make surveys and estimate the cost of increasing its waterworks system.

The Ohio Copper Company, Salt Lake City, Utah, will install additional equipment.

The Martin Machinery Company, Joplin, Mo., has completed plans for the erection of a machine and repair shop, 50 x 140 ft., one story, of reinforced concrete construction. The company will install a lathe, drill press, pipe machine, cutter, etc.

Western Canada

WINNIPEG, MAN., June 10, 1911.

Backward weather in the West revived the cautious temper the banking interests showed earlier in the season, but the present sunshine and the generally good crop news have dispelled hesitation in that quarter. Bank clearings are very considerably larger than they were in the corresponding weeks of last year. It is true banks keep to a rather close margin of accommodation, but this is rather because they have to prepare themselves for handling the biggest crop the country ever had than because they distrust the present trade movement.

The Grand Trunk Pacific Railway Company has come to an agreement with the City Council of Prince Rupert, B. C., on the subject of assessment and sundry other points. In consideration of a very nominal tax payment for the next 10 years, a company engages, among other things, to start work at once on a drydock to cost $2,500,000, upon a station, machine car shops, roundhouse, etc., to cost over $1,000,000, and to build a hotel at a cost of $1,000,000.

The Prince Rupert Hydroelectric Company, which will control the principal water powers in the vicinity of Prince Rupert, B. C., are about to offer for subscription in Canada $2,500,000 of first mortgage 5 per cent. bonds, to be expended upon permanent installation.

It is reported that the Mackenzie & Mann interests are about to purchase the entire holdings of the Western Fuel Company in the Manaimo district of Vancouver Island, B. C., for $4,000,000.

Up to June 26 tenders will be received by the Corporation of the city of Prince Alberta, Sask., for the construction of power station superstructure and transmission line for part of the proposed hydroelectric power development at Lacolle Falls.

Up to July 11 tenders will be received at the office of the Commissioners of the Transcontinental Railway at Ottawa for the construction of car shops at Transcona, east of Winnipeg. Each tender must be accompanied by an accepted cheque for $100,000.

There has been an unusual demand this spring for large power steam plows in the Canadian West.

It is now stated that the Gordon Wire & Wire Nail Works, of West St. John, N. B., will be located in Calgary, Alberta, and will employ from 75 to 100 men.

The Carter-Halls-Aldinger Company, Winnipeg, has received the contract to erect an addition to the tender and wheel shop of the Canadian Pacific Railway Company's Weston shops at Winnipeg. The new building will be 55 ft. x 220 ft.

The Farmers' Steel & Wire Company, Regina, Sask., will erect a six-story warehouse.

By-laws aggregating $100,000, for waterworks and electric light, have passed the Council of Canora, Sask., and will shortly be submitted for approval.

Tenders addressed to W. L. Courson, general manager, will be received until June 26 for supply of hydroelectric equipment for the Canadian Collieries, Ltd., Dunsmuir, Puntledge River. Contract includes complete hydraulic and electric equipment, furnishing and installation of two direct-connected units, each unit developing 3750 kva. at switchboard. Plans at office of company, Pemberton Block, Victoria.

An unique scheme, as far as Canada is concerned, is being considered in Moose Jaw, Sask. The idea is to put up a large factory building, to be supplied with water, light and power, and to be subdivided into separate premises, these premises to be let to small manufacturers at low rents with electric light, power and water in such a manner as to enable them to work separately. A committee is working on the proposition, and they will try to induce companies who manufacture on a small scale, and patent holders whose capital does not permit them to establish large plants, to take up the idea.

Plans for a big steel plant on the outskirts of Vancouver, B. C., have taken definite form by the announcement of William Owen, an English steel expert, that he had purchased for the Canada Pacific Steel Company a 200-acre factory site at Pitt Meadows. Mr. Owen states that the company, organized by himself, is supported by London and New York bankers.

The Alberta Glass Company is being organized in Calgary for the purpose of building and operating a glass factory at Redcliffe, five miles from Medicine Hat. A. E. Cross and other Calgary men are the organizers.

John Stirrett, of Hymers, near Port Arthur, has applied to the Council of Port Arthur for permission to erect a sash and door factory in connection with his sawmill.

Recently it was announced that four large lumber companies, controlling ten mills in the Kootenay country, British Columbia, were amalgamating with a capital stock of $20,000,000. The companies in the deal are the East Kootenay Mills, Rock Creek Mills, Standard Mills and Baker Mills, all near Cranbrook and Fernie, B. C. It is reported from Fernie that the concern will construct a sawmill at Baynes, on the Kootenay River, to cost $400,000.

George Spearman, Wynyard, Sask., will rebuild his 75-bbl. flour mill which was burned recently.

The City Council of Medicine Hat, Alberta, has made an agreement with the Medicine Hat Milling Company, Ltd., to furnish the company with 150,000 cu. ft. of gas daily without charge for a period of five years, and will exempt the company from municipal taxation, except local improvement and school taxes, for a period of ten years. The company agrees to erect a plant to cost $60,000.

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Eastern Canada

TORONTO, ONT., June 10, 1911.

Manufacturing activity, constructive operations and productive activity at the mines increase as the season advances. Each day seems to brighten the outlook and give further assurance to business men. Crop prospects are becoming an important influence upon competence. Predictions are freely made that the Western yield of wheat will be double that of last year. British favor seems to become stronger every year. Population and capital are being liberally supplied from the United Kingdom. There are some conditions that would ordinarily exert a depressing effect upon trade, but they are not getting any attention from that quarter at present. One of these is the talk of a general election in the autumn. In the present Parliamentary recess leading politicians of both parties are touring the country and addressing public meetings. The reciprocity agreement is not causing anybody to refrain from buying. Skilled labor continues to be scarce, though of rough labor the railway contractors report a fairly good supply. Competition is keen, but Canadian manufacturers seem to have no trouble in finding customers for their output. German activity on this market is greater than it was, and there is a feeling that German commercial interest in Canada is just beginning.

The Hurndall Furniture Company's factory at Orangeville, Ont., was destroyed by fire on June 9. The loss is estimated at $50,000 and is partly covered by insurance.

The Canada Refining & Smelting Company has begun the operation of its smelter at Orillia.

L. K. Comstock & Co., New York, have received the contract to install the heating and lighting plants in the new buildings of the General Hospital at Toronto, the price being $124,910. This was $12,484 below the lowest local tender put in.

It is reported that the Dominion Coal Company will add very largely to its plant at Springhill mines, where work has finally been resumed in a peaceful way, the long strike having been settled.

The City Council of Hamilton, Ont., has under consideration a proposal to establish a municipal power and lighting plant. The power expert to whom the question of preparing a preliminary plan has been submitted reports that the cost will be $502,000. A by-law will be submitted to the ratepayers for authority to raise this sum and apply it to the building of the plant.

Canada's trade commissioner in New Zealand reports that Canadian automobile manufacturers are getting a grip on the market there. In the year ending this month one Canadian firm has sold 320 motor cars in New Zealand.

The Imperial Mfg. Company, which is stated to be an outgrowth of Hesch Bros., Warren, Pa., is erecting a factory at Welland, Ont. Hardware specialties are to be made there.

The town of Welland will spend $75,000 to increase the capacity of its waterworks.

W. P. McNeil & Co., Ltd., New Glasgow, N. S., have undertaken contracts aggregating $400,000, for almost immediate erection. Among the large steel erecting contracts this firm has secured are a new forge and machine shop for the Nova Scotia Steel & Coal Company, at New Glasgow, a rail finishing mill building for the Dominion Steel Company, at Sydney; also offices for the same company at Sydney; a new forge and machine shop for the Canadian Car Company, at Amherst; a shipping pier and conveyor for the Nova Scotia Steel & Coal Company, at Wabana, Newfoundland, highway bridges for the New Brunswick government, at Bloomfield Station and Tracey Station; highway bridges for Nova Scotia government at Shubenacadie and a number of other points, including the immense new bridge across Wallace Harbor; large railway bridges on the Dominion Atlantic and National Transcontinental railways.

It is rumored that an English syndicate has bought out the Eddy Company's great system of industries on the Hull side of the Ottawa River, opposite Ottawa City.

A group of Montreal capitalists headed by Rudolphe Forget, M. P.; J. N. Greenshields, K. C., and Clarence J. McCuaig have concluded arrangements to purchase over 1100 sq. miles of timber lands in the St. Maurice River district, Quebec. They have also acquired the large timber and sawmill of Alexander Baptist, Three Rivers. Arrangements have been made for the formation of the Wayagamack Pulp & Paper Company, with a capital stock of $5,000,000. On an island at the mouth of the St. Maurice River a large pulp and paper plant will be erected which, at the outset, will have a capacity of 100 tons of pulp and 50 tons of paper. This first unit will be in operation by next fall, but it is the intention to immediately proceed with the installation of a further 50-ton unit for paper, and this second unit will be in operation by the spring of 1912. It is understood that the new company will devote the paper plant almost entirely to the manufacture of what is known as "kraft" paper.

Plans are being prepared by W. W. Doane, City Engineer, Halifax, N. S., for a municipal sewer system to cost $98,000.

The Canadian Pacific Railway Company, Montreal, has under consideration plans for the construction of a 500-ft. bridge at Graham Station, Ont.

Tenders addressed to F. F. Spence, chairman of the Board of Control, will be received until June 20 for the construction of a steel span crossing the tracks of the Canadian Pacific Railway at Weston road.

Plans are prepared for additions to the plant of the National Mfg. Company, Brockville, Ont.

Tenders are to be called for the erection of a factory for the Zimmerman Mfg. Company, Hamilton, Ont., the cost to be $25,000.

The Standard Sanitary Mfg. Company, Hamilton, is about to put up a new building, to cost $40,000.

The National Hardware Company is putting up a factory at Orillia, Ont.

The Oliver Plow Company, Hamilton, Ont., has awarded the contract for an additional factory building to cost $15,000 and for an office building to cost $40,000.

Up to August 1 tenders will be received by W. P. Kellett, Brantford, Ont., for the construction and equipment for the Brantford & Port Dover Railway, 30 miles in length. Steel towers are to be included, as also five large bridges.

Up to August 1 tenders will be received by J. Robinson & Sons, Niagara Falls, Ont., for the following electrical equipment: Lathe, drill press, shaper, electric rectifier.

The Getty & Scott Shoe Company and the Galt Paper Box Company, both of Galt, Ont., are now operating their plants with power supplied by the Hydro-Electric Commission.

It is expected that the Independent Tire Company will begin the construction of its plant in Guelph, Ont., early next month.

H. W. Bagnall, Ottawa, has returned from New York, where he is reported to have been successful in forming a company with a capital stock of $500,000 to manufacture a mine drill that has been patented by Charles Demerais, Hull, Quebec. It is proposed to build the factory in Hull at a cost of $100,000 and also to manufacture the implement in the United States.

The Standard Underground Cable Company, Perth Amboy, N. J., has completed plans for its Canadian branch plant, which is to be built at Hamilton, Ont. The building will be of "L" shape, 300 x 60 x 150 x 60 ft., three stories, of brick and structural steel construction.

The Yale & Towne Mfg. Company, having received from the citizens of St. Catherines, Ont., a concession granting nine acres of land with free water and a fixed schedule of taxation, will establish its Canadian branch plant in that city, initial factory building to cost $50,000.

The Pacific Coast

PORTLAND, ORE., June 8, 1911.

While the machine tool market is, on the whole, in satisfactory shape, there is no unusual feature at present, few purchases being of individual importance. Machine shops here and on Puget Sound are getting a very satisfactory volume of business, marine repairs being quite an important feature, as for some time past.

Local building operations continue extremely active, and a large amount of contractors' equipment is being used in this connection, in addition to which there is a good demand for small power and heating plants for the larger buildings. Contractors' goods are also in strong demand in connection with numerous development and irrigation projects through the interior of Oregon and Washington. Manufacturers and dealers in logging equipment have found business a little below normal for this season, though there is a fair demand for miscellaneous supplies in this line. The demand for sawmill and woodworking machinery is confined for the

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most part to small orders, though several complete mill outfits have been sold of late, and equipment will probably be required for several new projects during the summer. Notwithstanding the quietness in the lumber trade, quite a number of large timber owners are going ahead with plans for development. There has been considerable work on dredging equipment this spring, and arrangements are being made for the construction of several new dredges for service in various parts of Oregon. Several shops are still busy on mining machinery for Alaska, and heavy shipments are now being made to Nome and St. Michael.

Bids will be received by the city of Portland June 13 for 200 fire hydrants.

The Puget Sound Iron & Steel Works, Tacoma, Wash., has completed the installation of a steel converter, and is now ready for business in any kind of steel castings.

It is reported that the Moran Company, Seattle, Wash., has completed financial arrangements for the construction of a floating steel drydock, to accommodate vessels up to 15,000 tons.

A project is under way at Tillamook, Ore., to build a small hydraulic suction dredge, to cost about $50,000, for harbor improvements.

Major J. F. McIndoe, United States engineer in charge of river and harbor work in Oregon, is now in Washington on business connected with the building of two large suction dredges for service on the Columbia and Willamette rivers. It is understood that they will be built on the design of the dredge Columbia of the Port of Portland.

The Government navy yard at Bremerton, Wash., will shortly do considerable work on the cruiser Pennsylvania. The tubular masts are to be replaced by modern military masts, the ventilators are to be lowered and the machinery is to be overhauled.

The commissioners of Yakima county, Wash., have ordered the purchase of a steam shovel at not over $3,700.

An election was held June 6 at Ellensburg, Wash., to decide on the installation of a municipal water system, with a pumping capacity of 4,000,000 gal. daily.

The Case Furnace Company, Tacoma, Wash., will build a new factory at West Tacoma the coming fall. John Shetterly & Son are planning to build a sawmill and planing mill near Lyons, Ore., with a daily capacity of 25,000 ft.

The city of Vancouver, B. C., will be in the market shortly for a trenching machine.

The Sectional Threshing Cylinder Company, Spokane, Wash., will put up a new factory at Dishman, Wash.

J. W. Small, A. B. Crosier and A. N. Foss have purchased a sawmill at Montesano, Wash., and will put in a lot of additional machinery.

The British Columbia Lumber Corporation, Vancouver, B. C., is starting construction on a new sawmill, with a daily capacity of 200,000 ft., on Lulu Island, New Westminster, B. C. A shingle mill, planing mill and box factory will also be installed, the entire plant being operated by electricity. The engineering work is being superintended by Arthur Pracna, Seattle, Wash.

Caldwell Bros., Tacoma, Wash., have the contract for installing a power plant in Rhodes Bros.' new department store in that city.

The A. J. West Lumber Company, Aberdeen, Wash., has put in a new planing mill, with a Berlin band resaw and several other machines of this make.

E. M. Stephens is promoting a company for the installation of a sawmill, sash and door factory at Monroe, Wash.

The Branch Saw Works, St. Louis, Mo., has opened an office at 542 First avenue South, Seattle, Wash.

J. O. Bradney, representing the Clark Bros. Company, Belmont, N. Y., manufacturer of sawmill machinery, is now in Seattle, Wash., and expects to remain on the coast through the summer.

The Meixner Hydro-Gravity Pump Company has been incorporated at Spokane, Wash., with a capital stock of $100,000, by T. Meixner, B. C. Clausen and A. L. Hooper.

The Auto Gas Engine Starter Company has been incorporated at Olympia, Wash., with a capital stock of $1,000,000, by Allen Weir, P. English and W. C. Tedlie.

The Doernbecher Mfg. Company, this city, is installing a new chair factory, for which a lot of machinery has been ordered.

Considerable interest is being taken in the installation of a gas-producer plant by the Seattle, Wash., Gas Engine & Machinery Company in the auxiliary barkentine Archer of the Tacoma & Roche Harbor Lime Company. The plant will produce gas for a 300-hp. Nash marine gas engine.

Texas

AUSTIN, TEXAS, June 10, 1911.

Dry weather still prevails throughout the State and the corn crop has deteriorated materially the past week. Business in all lines, however, is reported to be very satisfactory. Machinery dealers are receiving an increase of orders and hopes are entertained that the general conditions will continue to improve. Orders for mining and other machinery in Mexico are beginning to be placed with American concerns now that the political troubles in that country have subsided.

The Austin Gas Light Company will erect a new generator house, with elevator, tower and engine at Austin. The cost of the improvement will be about $12,000.

The El Paso & Southwestern, the Galveston, Harrisburg & San Antonio, the Atchison, Topeka & Santa Fe and the El Paso Electric Railway Company have entered into an agreement with the City Council of El Paso to construct a steel viaduct on the county road at old Fort Bliss. The structure will be 641 ft. long and 37 ft. wide.

John Faulkner, of Hutchison, Kan., will install a 10-ton ice plant at Canadian.

The City Council of Henrietta has taken preliminary steps toward developing a water supply for the water-works system. A dam will be constructed and a lake created.

The Frantz Buckle Company has been organized at Weatherford, with a capital stock of $20,000. The incorporators are E. A. Frantz, Hugh McCrattan and J. L. Hill.

The Woodward Water Company, Woodward, has been formed with a capital stock of $10,000. The incorporators are M. Bargas, John M. Fentiman and M. B. Stewart.

La Lomita Irrigation Company, Brownsville, will construct a system of irrigation in the lower valley of the Rio Grande. The incorporators are James W. Hoyt, Arvid Franke and C. R. Scott.

Stone & Webster, engineers, Boston, Mass., who are constructing the interurban electric railroad between Houston and Galveston, 51 miles, have let the preliminary contract for the combination machine shop and car shed, to be located in Houston. The building will be of brick construction and will be duplicated later at Galveston by the company.

The Orange Lumber Company is moving its sawmill from Orange, Texas, to Merryville, La. Many important improvements will be made to the plant, including the construction of concrete tramways. The Southern Construction Company, Orange, has the contract for constructing seven concrete dry kilns.

W. T. Caswell, Austin, and associates who recently purchased the cotton compress of the San Marcos Compress Company at San Marcos, will make important improvements to the plant.

J. B. Folmar, Gause, contemplates installing a creamery at Hearne.

Otto Borchers, Cuero, and associates are preparing to establish a new town near Palacios.

The Commercial Club here is promoting the installation of a canning factory at Wharton.

The Sealy Oil Mill & Mfg. Company, which was recently formed with a capital stock of $35,000, has taken steps for the erection of the plant at Sealy. W. M. Moore is president of the company.

The Gulf Coast Brick & Tile Company will install a large quantity of tile-making machinery at its plant near Brownsville.

The Merchant's Ice & Cold Storage Company, San Antonio, will double the capacity of its 85-ton ice plant. It is making other extensive improvements.

The Kansas City, Mexico & Orient Railroad will establish a large car and machine shop at Hamlin.

C. A. Malone will build a cotton gin at Plainview.

The Gulf, Colorado & Santa Fe Railway Company will soon call for bids for the construction of a 16-stall brick low-type engine house, equipped with a new 85-ft. turntable, estimated to cost $46,000; a brick storehouse, $17,000; brick machine shop and blacksmith shop combined, $9,500; brick powerhouse, $6,200; brick sand house, $6,000. Other improvements, including steel water tanks and necessary pipe lines in the

THE MACHINERY MARKETS

Galveston yards, will be made. Frank Merritt is chief engineer, Galveston.

The City Commissioners of Dallas have opened bids for the furnishing of boilers, compressors and other appliances for the handling of six wells that the city is to use in the business section. Four 30-in. gate valves are to be used in this work and their cost is to be taken from the following bids: Smith & Whitney, $330 each; Rensselaer Valve Company, $230 each; Ludlow Valve Company, $330 each; Chapman Valve Company, $440 each; Crane Company, $1,345 for the four.

The Shade-Fowler Mfg. Development Company expects to erect a factory in San Antonio for the purpose of manufacturing automobile wheels. J. O. Howard, of San Antonio, is president of the company, and E. L. Farnsworth, of Waco, secretary.

The Urton Lake, Land & Water Company will construct a large system of irrigation near Fort Sumner, N. M. It purposes to reclaim about 50,000 acres of land. Its project will be combined with those of the Pecos Land Company and D. J. McCanne.

Charles D. Miller, territorial engineer, has approved the application of Andrieus A. Jones for water rights for a proposed system of irrigation in Guadalupe County, New Mexico. The application of L. A. Hughes and G. W. Prichard for use of the water of the Rio Grande at Cochiti, N. M., for operating a large hydroelectric plant has also been approved.

It is announced that the Southwestern Sugar Company, following the erection of its large beet-sugar factory at Portales, N. M., will erect a similar factory at Melrose, N. M. The company has signed up contracts for about 32,000 acres of sugar beets to be grown this season. May irrigation pumping plants will be installed upon these farms.

J. A. Huston, Carthage, Mo., who purchased the cotton gin at Loving, N. M., will double the capacity of the plant.

The Mexican Eagle Petroleum Company, City of Mexico, has placed an order with the Petroleum Iron Works, Sharon, Pa., for the erection of 50 steel oil storage tanks, each of 55,000-barrel capacity, to be put up at different points on the pipe line between Tuxpam and Tampico.

The Waters-Pierce Oil Company will enlarge the paraffin plant at its oil refinery at Tampico, Mexico, to five times its present capacity.

H. W. Felton, of Mazatlan, Mexico, and associates will install machinery and develop extensive coal properties near Cosala, State of Sonora, Mexico.

Government Purchases

Washington, D. C., June 12, 1911.

The Bureau of Yards and Docks, Navy Department, Washington, will open bids July 8 for auxiliary power plant equipment for the Mare Island Navy Yard, Cal.

The Commissioners of the District of Columbia, Washington, opened bids June 5 for furnishing one traveling crane for the McKinley Manual Training School, Washington, as follows:

Reading Crane & Hoist Works, Reading, Pa., $525; Whiting Foundry Equipment Company, Harvey, Ill., $750; Brown Hoisting Machinery Company, Cleveland, Ohio, $990; National Electrical Supply Company, Washington, D. C., $539; Curtis & Co. Mfg. Company, St. Louis, Mo., $616; New Jersey Foundry & Machine Company, New York, $1,140; O. M. S. Company, Plainfield, N. J., $315; Barber & Ross, Washington, D. C., $600.

The Bureau of Yards and Docks, Navy Department, Washington, opened bids June 3 for furnishing one locomotive for yard service at the Navy Yard, Portsmouth, N. H., as follows:

American Locomotive Company, New York, $5,200 and $4,750; Baldwin Locomotive Works, Philadelphia, Pa., $5,500; Vulcan Iron Works, Wilkes-Barre, Pa., $4,865; H. K. Porter Company, Pittsburgh, Pa., $4,845.

The Bureau of Yards and Docks, Navy Department, Washington, opened bids June 5 for constructing two electrically operated floating cranes complete, as follows:

Bergen Point Iron Works, Bayonne, N. J., $627,676 and $618,230; Cleveland Crane & Engineering Company, Wickliffe, Ohio, $579,218; Wellman-Seaver-Morgan Company, Cleveland, Ohio, $593,000; Newmeyer & Diamond, New York, $1,100,000.

The Fitz Gerald and Bennie Laboratories, Niagara Falls, N. Y., announce the removal on or about June 15 of their offices and laboratories from the Jewett Block, Falls street, to Highland and Whirlpool avenues. The new location will afford greatly enlarged and improved facilities for their work.

Trade Publications

Pressure and Storage Tanks.—William B. Scaife & Sons Company, Pittsburgh, Pa. Pamphlet. Concerned with a line of pressure and storage tanks for liquids and gases which can be supplied with riveted or welded joints. Both types of tanks are made from basic open hearth steel in sizes ranging from 60 to 550 gal.

Drill Chucks.—The Jacobs Mfg. Company, Hartford, Conn. Catalogue. Size, 6 x 9 in.; pages, 34. Concerned with the Jacobs improved drill chuck which is made in six sizes and nine styles. This chuck is of the three-jawed shanner sleeve type to which the key adjustment of the two-jawed type has been added. All of the different sizes of chucks are illustrated and brief specifications are given on the facing paces.

Pompton Pink Granite.—J. Harper Bonnell, 1133 Broadway, New York, N. Y. Budget of testimonial letter and picture post cards relating to a granite of pink, green and black blended, obtained from a quarry at Pompton Junction, N. J.

Coal and Ash Handling.—Guarantee Construction Company, 140 Cedar street, New York City. Pamphlet. Points out the advantages of using mechanical systems for handling and storing coal and ashes in power plants and shows a number of installations of plants made by this company.

Ball Bearings.—International Engineering Co., 1779 Broadway, New York City. Catalogue. Size, 6½ x 9½ in.; pages, 67. Gives general description and specification for the R. B. F. ball bearings which are made in the radial and the thrust styles. The different types of bearings are illustrated and directions for mounting them given.

Foot Presses.—The Manville Brothers Company, 25 Benedict street, Waterbury, Conn. Catalogue. Illustrates a number of different types of presses designed to be operated by a foot treadle. These include presses of the regular and pendulum lever type, two styles for covering buttons and hammer and eyelet punches.

Machinery and Mill Supplies.—The Cameron & Barkley Company, Charleston, S. C. Catalogue D. Size, 6 x 9 in.; pages, 1143. This is the company's 1911 catalogue describing and illustrating a complete line of machinery and supplies for oil mills, phosphate mines, fertilizer factories, railroads, contractors, machinists, plumbers, etc. All of the lines handled are those of standard manufacturers and the illustrations are numerous and are supplemented by tables of dimensions in the case of small parts, such as valves, fittings and elevator buckets, and brief descriptions and tables of specifications of the larger machines. A 36-page alphabetical index and a 5-page numerical index of figure numbers enable any article to be easily and quickly located. A number of tables of useful information complete the catalogue.

Recording Instruments.—The Bristol Company, Waterbury, Conn. Two bulletins, No. 146-A, superseding No. 146, deals with a long distance recording tachometer for measuring the revolutions of shafting and machinery and recording it at a distance without employing expensive electrical apparatus. No. 147-A describes the Bristol-Durad radii averaging instrument for circular chart records which is illustrated in *The Iron Age*, June 30, 1910.

Gas Engines.—Mesta Machine Company, Pittsburgh, Pa. Pamphlet. Treats of a horizontal double-acting four-cycle gas engine which is built in either single or twin tandem units. The construction of the engine is described at length and there are a number of half tones showing installations. A comparison of the heat losses occuring in steam and gas plants having a capacity of 1000 kw. completes the pamphlet.

Hand Bending Tools.—D. A. Hinman & Co., Sandwich, Ill. Catalogue. Relates to the use of hand bending tools for round and angle stock. These tools include three sizes of eye benders and a ring and a hinge bender. Thep are all illustrated and there are a number of views of the work turned out by them. Space is also given to a sheet metal shear for handling No. 14 iron or soft steel.

Electric Motors.—Crocker-Wheeler Co., Ampere, N. J. Three Bulletins. No. 128 superseding No. 85, deals with the form W motor for rolling mills and other severe service. No. 129, superseding No. 76, pertains to the line of direct current crane and hoist motors which this company manufactures. No. 132, superseding No. 120, describes and illustrates the form I machines which can be used for belt drive. In all of these bulletins the construction of the different motors is described at length and there are a number of engravings showing various applications of them.

Railway Supplies.—U. S. Wind Engine & Pump Company, Batavia, Ill. Catalogue No. 17. Size, 5½ x 8 in.; pages, 180. Covers a complete line of railway supplies including water columns and accessories, pumping machinery, switch stands and signals.

Wheel Presses.—E. R. Caldwell & Co., 34-84 Hilton street, Bradford, Pa. Catalogue. Points out the advantages of using the Caldwell hydraulic wheel press which is made in 29 sizes having capacities ranging from 50 to 400 tons. The construction of the machine is described and the engravings show it equipped for either belt or motor drive. A table of the various sizes of press with a number of the principal dimensions is given and a partial list of users complete the catalogue.

CURRENT METAL PRICES.

The following quotations are for small lots, New York. Wholesale prices, at which large lots only can be bought, are given elsewhere in our weekly market report.

IRON AND STEEL—

Bar Iron from Store—

Refined Iron:
1 to 1⅞ in. round and square ... ℔ 1.70¢
1½ to 4 in. x ⅝ to 1 in. ... ℔ 1.70¢
1½ to 4 in. x ¼ to 5-1 ... ℔ 1.80¢
Rods—⅝ and 11-16 round and square ... ℔ 1.80¢

Angles:	Cts. ℔ lb.
3 in. x ¼ in. and larger	1.90¢
3 in. x 3-16 in and ⅛ in	2.30¢
1½ to 2½ in. x ⅛ in	2.05¢
1½ to 2¾ in. x 3-16 in. and thicker	1.95¢
1 to 1¼ in. x 3-16 in	2.05¢
1 to 1¼ x ⅛ in	2.10¢
⅞ x ⅛ in.	2.20¢
¾ x ⅛ in.	2.25¢
⅝ in. x ⅛ in	3.45¢
½ x 3-32 in.	3.90¢
Tees:	
1 in.	2.35¢
1¼ in.	2.20¢
1½ to 2½ x ¼ in	2.00¢
1½ to 2½ x 3-16 in	2.10¢
3 in. and larger	2.95¢
Beams	1.90¢
Channels, 3 in. and larger	1.90¢
Bands—1½ to 6 x 3-16 to No. 8	2.10¢
"Burden's Best" Iron, base price	3.15¢
Burden's "H. B & S." Iron, base price	2.95¢
Norway Bars	3.60¢

Merchant Steel from Store—

	per ℔
Bessemer Machinery	1.90¢
Toe Calk, Tire and Sleigh Shoe	2.50@3.00¢
Best Cast Steel base price in small lots	7¢

Sheets from Store—

Black,	One Pass, Soft Steel.	C.R. Cleaned.	R. G.
No. 16	℔ 2.55¢		2.80¢
Nos. 18 to 20	℔ 2.70¢		2.90¢
Nos. 22 and 24	℔ 2.75¢		3.00¢
No. 26	℔ 2.80¢		3.10¢
No. 28	℔ 2.95¢		3.30¢

Russia, Planished &c.

Genuine Russia, according to assortment ... ℔ 12 @14½
Patent Planished, W. Dewees Wood ... ℔ A, 10¢; B, 9¢ net

Galvanized

Nos. 12 and 14 ... ℔ 2.95¢
Nos. 22 to 24 ... ℔ 3.30¢
No. 26 ... ℔ 3.50¢
No. 28 ... ℔ 3.80¢
No 20 and lighter 36 inches wide, 25¢ higher.

Genuine Iron Sheets—

Galvanized

Nos. 22 and 24 ... ℔ 5.75¢
No. 26 ... ℔ 6.25¢
No. 28 ... ℔ 7.25¢

Corrugated Roofing—

2½ in. corrugated.	Painted.	Galvd.
No. 24 ... ℔ 100 sq. ft.	$3.85	$4.80
No. 26 ... ℔ 100 sq. ft.	2.95	4.00
No. 28 ... ℔ 100 sq. ft.	2.60	3.75

Tin Plates—

American Charcoal Plates (per box)

"A.A.A." Charcoal:	
IC, 14 x 20	$6.65
IX, 14 x 20	7.90
A. Charcoal:	
IC, 14 x 20	$5.60
IX, 14 x 20	5.70

American Coke Plates—Bessemer—

IC, 14 x 20 ... 107 lb.	$4.50
IX, 14 x 20	5.50

American Terne Plates—

IC, 20 x 28 with an 8 lb. coating	$8.70
IX, 20 x 28 with an 8 lb. coating	10.70

Seamless Brass Tubes—

List November 13, 1908. Base price, 18¢

Brass Tubes, Iron Pipe Sizes—

List November 13, 1908. Base price, 18¢

Copper Tubes—

List November 13, 1908. Base price, 21¢

Brazed Brass Tubes—

List February 1, 1911. 19⅛¢ ℔

High Brass Rods—

List February 1, 1911. 14¢ ℔

Roll and Sheet Brass—

List February 1, 1911. 14¢ ℔

Brass Wire—

List February 1, 1911. 14¢ ℔

Copper Wire—

Base Price, Carload lots mill 13¾¢

Copper Sheets—

Sheet Copper Hot Rolled, 16 oz. (quantity lots) ... ℔ 18¢
Sheet Copper Cold Rolled, 1¢ ℔ advance over Hot Rolled.
Sheet Copper Polished 20 in. wide and under, 1¢ ℔ square foot.
Sheet Copper Polished over 20 in. wide, 2¢ ℔ square foot.
Planished Copper, 1¢ ℔ square foot more than Polished.

METALS—

Tin—

Straits Pig ... ℔ 49 @49½¢

Copper—

Lake Ingot ... ℔ 14 @14¼¢
Electrolytic ... ℔ 13¾@14 ¢
Casting ... ℔ 13¾@14 ¢

Spelter—

Western ... ℔ 6¼@6¼¢

Zinc—

No. 9, base, casks ... ℔ 7¾¢ | Open ... ℔ 8¼¢

Lead—

American Pig ... ℔ 5 @5¼¢
Bar ... ℔ 6¾@6¾¢

Solder—

½ & ½, guaranteed ... ℔ 27½@28 ¢
No. 1 ... ℔ 25½@26 ¢
Refined ... ℔ 24½@24¾¢
Prices of Solder indicated by private brand vary according to composition.

Antimony—

Cookson ... ℔ ..@10¼¢
allets ... @10 ¢
Other Brands ... 9@ 9½¢

Bismuth—

Per ℔ $2.00@$2.25

Aluminum—

No. 1 Aluminum (guaranteed over 99% pure), in ingots for remelting ... 21¢ and 23¢
Rods & Wire ... Base Price 31¢
Sheets ... Base Price 33¢

Old Metals—

Dealers' Purchasing Prices Paid in New York.

	Cents.
Copper, heavy and crucible	10.50 to 10.75
Copper, heavy and wire	10.25 to 10.50
Copper, light and bottoms	9.25 to 9.50
Brass, heavy	7.00 to 7.25
Brass, light	5.50 to 5.75
Heavy machine composition	9.00 to 9.25
Clean brass turnings	6.75 to 7.00
Composition turnings	7.75 to 8.00
Lead, heavy	3.75
Lead, tea	3.50
Zinc, scrap	4.00

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